

I DIDN'T KNOW YOU COULD DO **THAT** WITH A COMPUTER

*Practical, Unusual and Wonderful
Software You Can Buy*

Dan Gutman

Author of the syndicated newspaper column "Computers & Technology"



Trace Your Family Roots • Learn To Speedread •
Get A Workout • Analyze Your Personality • Fix Your
Car • Make Your Own Rock Videos • Write Your Will •
Save On Your Electric Bills • Manage Your Hog Farm •
Learn A Foreign Language • Chart Your Horoscope • Learn
Morse Code • Mix A Drink • And Dozens More!

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Software You Can Buy*

Dan Gutman

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To my mom

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Preface

Why does anyone need a personal computer?

Phillip Estridge, IBM

*No one has figured out how a computer can be truly
useful at home.*

The New York Times

*Why do I need a personal computer? It's a question
both the industry and Madison Avenue are desper-
ately trying to answer....*

USA Today

Sometime in 1983, when I was the editor of *Computer Games* magazine, I came across an obscure computer program called *Abuse*. It was a novelty program that did nothing but insult the user. When you typed "Hello" into the keyboard, *Abuse* would shoot back something like, "Please turn me off, you wart-ridden lout!" It was ridiculous, but it was the first time I really saw the potential of the personal computer.

Until then, computers had seemed to be good for only three things:

1. They're an indispensable tool for writers. Word processing is truly a revolution in writing. But most people aren't writers.
2. They're great for manipulating spreadsheets. But most people aren't accountants. The average guy on the street has no use for a spreadsheet.
3. They're good for playing games. But most people don't play games. And even if they did, few would shell out \$500 or \$1,000 for a few hours with *Pac-Man*, or even *Zork*.

If these three things were all a computer could do, there really would be no reason for most people to have one in their homes.

But when I saw *Abuse*, I thought, “Aha! Computers can do other things.” *Abuse* wasn’t a word processor, it wasn’t strictly a game, and it certainly wasn’t a spreadsheet. It was something different.

I began to see tiny ads in the backs of the computer magazines for other types of unusual software: programs that would help you plan out a family trip, track your bowling average, analyze your personality, or calculate your mortgage payments. There were *hundreds* of them. Some were practical, some were just interesting, some were outrageous. I invented a new category of software to cover this wonderful stuff—*weirdware*.

For the most part, these programs came from mom-and-pop software companies working on kitchen tables, not from giant corporations. I met a guy who took advantage of the fact that computers have perfect pitch to create a program for tuning a guitar. *What a great idea*. He told me he’d sold 20 of them, and if he could sell 10 more, he’d make money. I was amazed to find that very few people seemed to know about these programs. But to me, they were far more interesting than “integrated software” or “relational database managers” (whatever *they* are). While all the experts were saying they didn’t see a reason for anyone to own a computer, I kept seeing *hundreds* of reasons to own a computer.

Who Needs a Personal Computer?

Nobody. Of course, nobody needs a microwave oven, food processor, or telephone answering machine, either. We got along fine before these products were invented. What’s the big fuss about computers? What makes a computer different from an appliance like, say, a dishwasher?

Here’s my theory—nobody ever put a dishwasher on the cover of *Time* and named it “Man of the Year.” Nobody ever said dishwashers were the wave of the future. We never saw commercials scaring us into thinking our kids would be left behind if they weren’t dishwasher-literate.

Dishwashers never received the hype of computers. And

because of that, nobody was ever disappointed by a dishwasher. We never see quotes like, “There is no place in the American home for a dishwasher,” or, “What can anyone do with a dishwasher?”

It’s ironic that we don’t know what we can do with a computer, because the computer is the *only* appliance that can do more than one thing. Even if it were limited to word processing, spreadsheets, and games, that’s *three* times as many things as other appliances can do. Toasters toast. Refrigerators cool. Lamps illuminate. That’s *all* they do, and most people are satisfied with that. One appliance/one task.

But the computer—by its very nature—can do *hundreds* of tasks. That’s its strength and also its disadvantage. The computer doesn’t have a *specific, well-defined purpose*. It can do so many things that we don’t know *what* it can do. It’s not that there’s nothing you can do with a computer—it’s that you can do too *much*.

Cracking the Myth

The history of computers has been grounded in myths. For the longest time, we all thought computers were evil machines that would be used by government and big business to control people. Remember *The Forbin Project* and all those other science fiction movies? This myth started to give way when computers became small enough and cheap enough that we could put them on our desktops.

Then came the myth that the computer was the savior of civilization. This was in 1982, when *Time* put it on the cover. People started believing that all we had to do was to put a computer in every office, school, and household, and we’d end the wars, save millions of dollars, crank out children smarter than Einstein...and balance our checking accounts.

That one didn’t last long. Pretty soon people realized that bad computer programs don’t educate children any better than bad teachers do. And if you can’t balance your checking account on paper, you’re not going to balance it any better on a green screen.

That’s when a third myth came into vogue—computers aren’t really good for *anything*. The people who bought cheap

computers in 1982 were disappointed with them. They were surprised to find that computers are different from other household appliances. The computer is the first gizmo that you bring home, plug in, turn on, and watch do *absolutely nothing*. Imagine bringing home a television set and finding that all you could watch were test patterns. “The Computer Revolution” had the ring of hype, and it wasn’t long before a lot of those VIC-20s and TI-99s were gathering dust in closets.

The purpose of this book is to dispel the myth that computers are useless and to show some of the many things they can be used for. In these pages you’ll find over a hundred practical, unusual, and interesting software programs. Most likely, you’ll find at least a few that would come in handy to you. As computers get smaller, less expensive, and more powerful, other practical uses will be developed. Someday, I hope, these programs I’ve called weirdware won’t be considered weird at all.

The Weirdware Revolution

But why has weirdware been such a secret until now? Currently, only 14 percent of American homes have a computer. That’s an audience of millions of people, but it’s not nearly as large as the potential audience for a product like, for example, Cherry Coke. Coca-Cola has to sell Cherry Coke to only a few of us to make money. But if a manufacturer spends millions of dollars developing a computer program for the home, it has to sell the program to a *lot* of those 14 percent to make money.

A program that tracks your bowling average sounds great, but it will appeal only to bowlers who own computers—an even *smaller* audience. It doesn’t make sense for a manufacturer to develop and market a bowling program when the audience for it is so limited.

So you don’t see any of the big software companies coming out with bowling programs. They’re generally forced to develop programs that will appeal to the largest possible audience. Software for smaller groups of people with a specific interest—weirdware—usually comes from small companies that don’t have the money for flashy ads or national distribution.

This has led to the myth that computers are good for only a few very general tasks.

The big software companies concentrate on programs for business, so people think computers are good for business-people only. It's almost as if the big record companies only sold albums called "Music" instead of rock, classical, soul, blues, jazz, and so forth.

What would kill the myth? Well, if more people owned computers, software publishers could afford to take a risk with programs aimed at more specific interests. But it's a Catch-22. People aren't going to buy computers unless they believe there's something they can do with them—right now.

Another way the myth would die is if some magic program came along that made people want to own a computer just so they could use it. The Apple II computer didn't sell well until the release of *VisiCalc*. When people in the business world saw how easy it was to juggle numbers on a *VisiCalc* ("visible calculator") spreadsheet, they wanted—and needed—a computer. A magic program like *VisiCalc* could come along for the home. Somebody might be working on it in some bedroom even as you're reading this. But we can't predict what such a program would be like, and it would be foolish to sit around waiting for it.

The third thing that might end the myth is weirdware. Usually, when I tell people about one of the programs in this book, their eyes light up and they exclaim, "I didn't know you could do *that* with a computer!" Well, you *can*. You can choose the right college, analyze your diet, and fix your car. You can pick the winners of Sunday's football games; teach yourself French, Spanish, or Morse code; and figure out how much insurance you need. For some people, these applications may seem trivial compared to Lotus' 1-2-3. But for many of us who aren't corporate executives, choosing the right college or betting on football games is closer to home than managing a company's finances.

You can buy the software described in this book, and you can run it on your computer right out of the box. You don't have to know anything about computers or programming.

Many of these programs can't be found in computer stores, but you can write directly to the manufacturers for more information—their addresses are in the back of the book.

Most likely, it won't be one magic *VisiCalc*-like program that ends the myth that computers are useless. It will be an awareness of the broad class of unusual, practical, and wonderful software that's already out there. Once we know that computers can do all these amazing things, computers will become everyday appliances in our homes. I hope so, anyway. And I hope this book will move us a bit toward that goal.

Dan Gutman
Summer, 1986

A Note to the Reader

For each piece of software in this book, I've listed the name of the manufacturer and the brands of computers the software is made for. In general, Apple II means any Apple II-compatible computer, and IBM PC means any IBM-compatible. All Commodore 64/128 programs will run on either a Commodore 64 or a Commodore 128. Atari includes all Atari eight-bit computers. If a program is made for the Atari ST line, that's indicated separately. Macintosh programs run on any Apple Macintosh computer, unless otherwise indicated.

If you're not sure whether a program will run on your computer, check with the manufacturer for specific information before you buy the product.

I haven't listed prices here, because they fluctuate frequently, and the manufacturer's suggested retail price is often deceptively high. Usually, the software prices are between \$20 and \$30. Products that include hardware devices are less than \$150. The manufacturers will be happy to tell you the exact prices. They're listed alphabetically with addresses in the appendix.

CHAPTER 1

Your Home and Family

Trace Your Family Roots

There isn't a computer program in the world that will go to Europe or Africa for you and track down your long-lost ancestors. Maybe in a few years. But if you do the research, your computer is excellent at storing and organizing all the information. *Family Roots*, from Quinsept, is one of many genealogy programs on the market. There's even a program of pet genealogy called *Pet-I-Gree* (by Genealogy Software) for dog breeders.

But for now, let's stick with humans. *Family Roots* is broken into six interlinked programs, the first of which is "Edit." You type in each family member, including as much information as you have on the person. You can include the name, date of birth, place of birth, date of baptism, sex, number of marriages, cemetery where the person is buried, and occupation. Any of this data can easily be changed if you should find out more about the person. The computer assigns an identification number to each individual and keeps track of the relationships between members of a family.

The "Charts" section of *Family Roots* allows you to make printouts of charts in different forms. You can take your great-great-grandfather and print out all his descendants (up to seven generations), all his predecessors, or his immediate family. The "Sheets" section of the program lets you print single pages about an individual or a family, which are nice to send to the people involved. It's also possible to print out all the addresses of living relatives, which can be helpful around holiday time.

The "Search" section of the program helps you find people who fit into specific groups. As an example, the computer can quickly name all the members of your family who died between 1890 and 1920, if for some reason you need that information.

◆ Chapter 1 ◆

Family Roots was created by a genealogist and can be best used by people from large families with a serious interest in the subject. If you have a small family tree or if you don't know much about your ancestry, you'll be better off with a written record kept in a safety-deposit box.

Quinsept, for Apple II, Commodore 64/128, CP/M, IBM PC.

Other programs to look for: *Pet-I-Gree (Genealogy Software)*, for Apple II; *Patriarch I (Cyclone Software)*, for Apple II; *Ancestors (Autumn Color Software)*, for Radio Shack TRS-80 Color Computer; *Your Family Tree (Acorn Software)*, for IBM PC/PCjr, TRS-80 Models III/4.

Track Your Baby's Development

Does your newborn son turn away when you try to clean his nose? Does your baby girl squeeze dolls or toys in order to make them squeak? These are two of the questions asked of parents who buy *Discover Your Baby: Birth to Two Years*. The program attempts to help a couple determine what stage of development their child is in, and what activities he or she might be ready for.

Discover Your Baby begins by asking for your baby's name, sex, and birth date. True/false questions are then asked about the child's behavior and skills in four developmental areas—moving, thinking, talking, and feeling. If you answer yes to a question like, "Does she cry if you leave her alone in a room?" more questions are generated. The questions were created with the help of several educators and child psychologists.

When you start answering no to the questions, that's an indication that a certain level of development has been reached, but not surpassed. The program generates a graph illustrating your baby's progress in each performance area. The graph will tell you which percentile your child is in, compared with others in the same age group. The program then tells you, "Your baby will benefit from and have fun doing these activities...." About 200 "Stepping-Stone Activities" are listed in a book that accompanies the program.

When your baby reaches a milestone in development—such as rolling over, laughing out loud, or crawling—music comes out of your computer celebrating the good news. A "milestone screen" is displayed announcing the event, and you can print this out and tape it to the refrigerator or send it to the relatives. *Discover Your Baby* also allows parents to electronically jot down notes about allergies, illnesses, and traumas, and make a record of immunizations.

◆ Chapter 1 ◆

There has been some criticism that programs like this push children to achieve goals when simply gurgling and drooling take up most of a child's day. One rule of thumb—computer programs can be helpful tools, but they don't replace human doctors, teachers, school psychologists, or your natural instincts.

Random House, for Apple II.

Other programs to look for: Childpace (*Early Development Resources*), for Apple II, Commodore 64/128, IBM PC. Readers who wish to track their babies' development even before birth should look at Pleasantly Pregnant (*Festive Fare*), for Apple II, Commodore 64/128. This program will tell you facts about the fetus, normal physical changes, and warning signs, and give you nutritional advice.

Improve Relations with Your Children

What can you do when your kids are driving you up the wall? When all else fails, you might try *Mind Over Minors* (let's call it *MOM*). This program attempts to use artificial intelligence techniques to help parents identify a child's strengths and weaknesses, and improve the parent/child relationship. *MOM* was created with the help of several child psychologists.

First, the parent is presented with a list of 96 adjectives that might describe a person. *Cheerful, curious, insecure, energetic*, and so on. For each word, you hit a key to indicate whether the word describes your personality or not. Then you do another assessment of the same words to describe your child.

The computer develops a psychological profile of both parent and child based on your assessment. You receive a "Strategy Report"—advice to help you understand your child, improve communication, increase your child's performance, and improve discipline techniques.

While a book on child psychology gives advice about *any* child, a computer can give specific advice for you and *your* child. By matching up the two personality profiles, the computer can figure out where the personalities might clash.

(The program is operating under the assumption, by the way, that it's possible to sum up a human being with just 96 adjectives. You may not believe life is that simple, but much of our traditional psychological testing makes a similar assumption.)

I tried *Mind Over Minors* with my nephews, Adam and Nathan. The program was pretty accurate with Adam. It described him as clever, confident, a natural leader, and said that "keeping pace with his active lifestyle can require a lot of effort." All correct—Adam is a handful. The program suggested a few good techniques to control Adam's energy.

◆ Chapter 1 ◆

But *MOM* missed the boat with Nathan, who has a quiet, introspective personality. The computer claimed that he wants to be the center of attention, and that "his confidence may occasionally become so strong that you find your own authority challenged by him."

The program's accuracy seems to depend entirely on the adult's assessment of his or her own personality and that of the child. If the assessment is off the mark, the whole psychological profile may be thrown off. In other words, if you're an excellent judge of your personality and your child's personality, the program may help you. If you're a poor judge, it's probably useless.

Two versions of *MOM* are available, one for parents and one for teachers. The program also comes with an excellent book on child rearing.

Human Edge Software, for Apple II, Commodore 64/128, IBM PC.

Protect Your Children

Software, which used to be concerned mainly with blowing away aliens and eating yellow dots, is finally getting concerned about the problems of growing up. Recently, there's been a movement toward programs that help young people make important life decisions.

Some educators believe computers can teach a moral lesson better than pamphlets and lectures, which students often see as manipulation. "A good computer simulation draws you into its world and temporarily you believe in that world," says software author Tom Snyder. "The simulation makes you examine your decisions more carefully."

Here are a few examples of the new socially conscious software:

Make It Click. This program tackles the subject of seat-belt safety. Users aren't just told that seat belts are good things that should be worn at all times. They are given facts (such as "one out of every ten people will be in an auto accident in the next 12 months") and are asked to select from 100 onscreen "friends." The computer replaces the statistically correct number of the friends with wheelchairs (to indicate that they were injured) if they weren't wearing seat belts. It's gruesome, but it teaches a lesson. (Sunburst, for Apple II.)

Keeping Safe. Recent sexual abuse cases have alerted parents to teach their children how to handle dangerous situations involving adults. *Keeping Safe* is a nonthreatening simulation in which children learn how to deal with strangers and other overly friendly adults. (Marshware, for Apple II.)

Home Alone. What should a child do when he or she is home alone and a stranger comes to the door? What if there's a fire or a power failure? These are a few of the questions answered here in a game format with "Bingo Bugglebee." (Quest Learning Systems, for Apple II, Commodore 64/128.)

◆ Chapter 1 ◆

The Other Side. For older students. Players are required to use critical thinking skills to avoid war. Two teams (countries) must build a bridge connecting each other. In order to build the bridge, they must communicate, collaborate, and maintain a healthy economy. This is one of the first nonviolent “war” games for computers. (Tom Snyder Productions, for Apple II, IBM PC.)

In the past, the computer industry has been known for making piles of money and keeping it, not for making the world a better place to live. Software, like the people who use it, may be growing up.

Other programs to look for: Safety First (*Learning Well*), for Apple II; Drug Alert! (*Learning Well*), for Apple II. See also sections on “Stop Smoking” and “Learn to Drive a Car.”

Throw a Party

Usually, when someone is killed in your house, it doesn't make for an enjoyable evening. But there are exceptions.

In recent years, a new kind of party has become popular—the murder party. A bunch of people come over to your house, and somebody is mysteriously “killed.” The other guests spend the rest of the evening searching for clues, interrogating each other as witnesses, and trying to solve the crime. Murder parties are often run by professionals, who plan and “execute” the evening's entertainment from crime to arrest to confession.

Murder Party lets you host an evening of murder entertainment for six to eight people. It's not a game that you play on the computer, but the computer generates all the materials you need—invitations, role-playing instructions, scenarios, and clues.

When all the guests have arrived at the party, they'll discover that someone has been killed. Anyone could be the murderer. Even the hosts don't know whodunit until the end (unless they cheat and look at everyone's clues). Each party-goer gets a personalized clue booklet. Inside are police evidence and information about where you were at a certain time and what you saw or overheard. You don't want to tell the other players what you know, but you have to tell the truth if they question you directly.

One of the two scenarios on the disk is a takeoff on *The Big Chill* (called “The Big Kill,” of course). Your old college gang is getting together at the funeral of your friend Jeremy Summers, who committed suicide. (Jeremy was a popular actor in shlock TV shows like “Meat for Hire.”) As it turns out, Jeremy didn't kill himself; he was murdered.

You may be any of the characters, such as Teddy, the ex-hippie. The description of Teddy goes like this: “Sure it was fun hanging out with the boys on Hippie Hill, but another year like this and Teddy would end up just another drooler on

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the Haight hawking plastic love beads to Joe and Mary Sixpack in from Indiana for the tuna festival. A little career planning was in order.”

As often happens with close friends, every one of the group has a motive for killing Jeremy. I won't give away any of the possible endings here. Needless to say, it's always fun finding out which one of you is the murderer, and it sure beats parties where everybody stands around with a drink in hand making small talk.

Electronic Arts, for Commodore 64/128.

Other programs to look for: Murder Party is an adult game, but the computer is also suited for children's parties. Take a look at Walt Disney Card & Party Shop (Bantam Electronic Publishing), for Apple II and Commodore 64/128, and PartyWare (Hi Tech Expressions), for Apple II, Atari, Commodore 64/128, IBM PC. PartyWare prints out banners, party hats, place mats, place cards, a party-planning checklist, party game ideas, prize ribbons, invitations, and thank-you notes. It also includes a database for names, nicknames, addresses, phone numbers, birth dates, and special events for up to 60 party-goers.

Prepare for the S.A.T.

Question: What is the most terrifying test you will take in your entire life?

- A. Driving
- B. Wassermann
- C. Vision
- D. S.A.T.
- E. Blood

The correct answer is probably D. Taking the Scholastic Aptitude Test can be the most traumatic event of adolescence—more harrowing than dating, pimples, or getting picked last for basketball games. It has been known to reduce class brains to moron level and elevate that quiet kid who sat in the corner for four years to genius status.

The S.A.T. has been criticized from all sides, but each year we lead our children—like sheep carrying number two pencils—into gymnasiums and auditoriums for the slaughter. Like it or hate it, most of us have to take it, and it's an important factor in determining which students will be accepted or rejected by over 1800 colleges.

There's no reason why you shouldn't go to college just because you don't know what the word *usufruct** means. *Preparing for the S.A.T.* is one of many computer S.A.T. programs. It includes five disks, an audiocassette, and two informative booklets. The program costs over \$100, but that's a lot less than you'll pay for most classes that claim to prepare students for the S.A.T.

One of the most important things that the S.A.T. measures is how well you take tests. The "Taking Aptitude Tests" disk in this program shows you how the S.A.T. is different

* *Usufruct*—A ridiculous word you'll never use which means "the right of enjoying all the advantages derivable from the use of something which belongs to another, as far as is compatible with the substance of the thing not being destroyed or injured," according to *The Random House Dictionary*.

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from all other exams. Most school exams assume that the average student will get 75 percent of the questions correct. So when you take a school test, you know that you should answer just about every question in order to achieve a high score.

The S.A.T., on the other hand, assumes that you'll get only 50 percent correct. This means that you can leave many of the questions blank and still do very well. That should change your strategy. Instead of laboring over each question and wasting time on the hardest ones, *Preparing for the S.A.T.* teaches you how to use your time effectively—you should scan the entire test first and answer any questions you're sure you know. Then, if you still have time, tackle the harder ones. This way, you'll leave the hardest questions unanswered. Those are the ones you would most likely have gotten wrong anyway.

That's just one strategy explained in the program. Each disk provides drills for a section of the real S.A.T.—Vocabulary Builders, Analogies, Number Series, and Quantitative Comparisons. The drills generally have 40 questions, and you are told the percentage of your correct and incorrect answers. Perhaps the most valuable part of the program is the booklets that accompany it. These explain several tricks the test-makers routinely use to trip up careless test-takers.

Program Design International, for Apple II, Atari, Commodore 64/128.

Other programs to look for: Barron's Computer Study Program for the S.A.T. (*Barron's*), for Apple II, Commodore 64/128, IBM PC; Krell's College Board S.A.T. (*Krell Software*), for Apple II, Atari, AT&T, Commodore 64/128, IBM PC, Kaypro, Tandy 1000. Krell also makes programs to help students prepare for the LSAT, GMAT, NTE, GRE, and ACT tests.

Choose the Right College

This is how most high school students go about picking their future college: A close friend or their Uncle Herby tells them that SuchandSuch University is supposed to be a fine school. They look up SuchandSuch U. in a big fat book of colleges to find out what it has to offer. If they like what they read, they apply for admission and visit the school. If they don't, it's back to the big fat book to look up other schools.

Wouldn't it make more sense to decide what you want in a school *first*, and *then* get a list of schools that meet those requirements?

College Explorer doesn't tell you which schools are good and which schools just have good football teams. It finds out what's important to *you*. Do you want to go to a school close to home? Do you care about the school's religious affiliation? Which student activities are you most interested in? You're asked to specify your preferences about areas of study, enrollment size, degree level, athletics, setting (rural or big city), and other categories that students frequently ask about. You can even specify that you only want to go to a college that has a swimming pool.

The program has a database of 2700 colleges. As you indicate the options that are important to you, what you're really doing is building a profile of the perfect school for you. The computer takes all your information and weeds out the schools that don't meet your requirements.

For example, if you live in New Jersey and you want to stay in the Middle Atlantic states, the computer will eliminate the hundreds of schools outside that area. If you tell the computer you want to major in Meat and Animal Sciences, it will knock out any Mid-Atlantic schools that don't offer a degree in that field. If you say you want to major in Meat and Animal Sciences at a Mid-Atlantic school that has a student ratio of

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100 females for every male, it will probably tell you to forget about college. *College Explorer*, unfortunately, can't dream up schools that don't exist.

Most of the time, however, it will come up with a few suggestions of colleges that meet your needs. With your list of potential colleges, it's a simple matter to look up more information about them in *The College Handbook*, an extremely big fat book which comes with the program.

It's a lot easier to spend half an hour with *College Explorer* than it is to drive three hours to SuchandSuch University, only to find that they don't even offer a degree in Meat and Animal Science. For students who know what they're looking for, *College Explorer* is a great way to pick the most appropriate school and avoid making a disastrous mistake.

The College Board, for Apple II, IBM PC.

As long as you're on your way to college, you might as well apply for some financial aid. Krell Software's *Study Money* lists about 1900 sources of financial aid and helps you decide which ones you have the best shot at. It's available for Apple II.

Other programs to look for: College Decision (*Educational Planning*), for Apple II.

Go to College

There's something to be said for going away to college. You get to live away from home, meet all different kinds of people, and root for your school football team. There's also something to be said for going to college from the comfort of your computer terminal. Becoming a part of TeleLearning's The Electronic University gives you the opportunity to get a certified college degree at home. It's perfect for people who don't live near a college, are handicapped, or don't have the time to attend regular classes. Now that we can hook our computers together over phone lines, time and location don't have to be barriers to learning.

Each student of The Electronic University is assigned an Electronic Memory Mailbox number, which is a piece of memory in TeleLearning's mainframe computer. A catalog of over a hundred courses arrives in the mail every semester, and you can register for any one by typing your credit card number into your computer. Courses cost \$35-\$375, including communication costs.

Your instructors are college professors, who may live thousands of miles away from you. They have mailboxes, too. After you do any assigned work, you'll take a "Progress Evaluation Assignment" and send it electronically to your professor's computer. Your professor will make comments and return the test to you the same way. You can ask any questions via electronic mail or take advantage of a professor's "electronic office hours," in which the two of you get online simultaneously.

This isn't any rinky-dink school. More than 1800 colleges participate in The Electronic University, including UCLA, Boston University, New York University, and schools as far away as the University of Guam. You can get a bachelor's degree, a graduate degree, an MBA, or take classes from various trade schools and professional associations. There are even online tutors for helping your children with their schoolwork. Classes

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are as diverse as Freshman English, Starting and Managing Your Own Business, Corporate Finance, the California Wine Connoisseur, and Crap Shooting for the Innocent. Last semester, Wardell Pomeroy, coauthor of the Kinsey Report, taught a seminar on human sexuality.

Enrolling in The Electronic University comes with a few other perks. Occasionally the school will hold an "interactive lecture" with an expert in a particular field. Any students can read the teacher's words onscreen, ask questions, and have them answered. It's possible to communicate with the other students at the lecture and strike up an electronic pen-pal friendship. Instead of taking notes from the lecture, you can just print the whole thing on your printer.

You'll also have around-the-clock access to The Electronic Library and The Info Center. The library contains 8,000,000 books, magazines, a complete encyclopedia, and even abstracts from *The Harvard Business Review*.

TeleLearning chairman Ron Gordon claims that computer classes can be more worthwhile than just reading a book on a subject. "Books are static and passive," he says. "With The Electronic University, you can interact with your own private instructor, and he can tailor the course just for you." Gordon claims EU replaces impersonal textbooks and crowded lecture halls with individual attention.

It's doubtful that telecollegiate learning will ever fully replace the ivy-covered walls of a traditional university. The old Army-Navy clash could become a computer football game, but it's doubtful that TeleLearning will ever offer an online frat party or a course in Electronic Food Fighting.

TeleLearning, for Apple II, Commodore 64/128, IBM PC.

Another computer college: *American Open University of New York Institute of Technology.*

Manage Your Career

Construction worker? Farmer? Machine operator?

When you make your living as a writer, you don't expect to be told that you're best suited to occupations like the above. But I had honestly told CBS's *Career Planning* that I enjoy physical labor, and the computer honestly told me jobs which would provide this satisfaction. Despite that fluke, the program can really help a young adult starting out to pick the right career and manage it skillfully.

Career Planning is more than a computerized aptitude test. The four-disk program is designed for job hunters and job holders. Disk 1 (Assessing Your Skills and Attitudes) examines your likes, dislikes, talents, and feelings about work. Disk 2 (Writing a Career Plan) probes the importance of your working environment, co-workers, location, salary, and job responsibilities. Disk 3 (Strategies for Career Change) helps you decide if you should change the direction of your career and in what way. Disk 4 (The Art of the Interview) helps you write your cover letter and résumé, and provides tips for that all-important personal interview.

The computer is worthwhile only if it can perform a task differently from other media—like books. The bestseller *What Color Is Your Parachute?* can also help you plan your career, but it doesn't do it *interactively*. To teach you how to handle the interview situation, *Career Planning* puts you in that situation and requires that you make decisions. In this case, you are the interviewer, and you've got to decide which of four applicants should be hired for two positions. Your assessment indicates whether or not you'll know the right things to say when you're on the other side of the desk.

In evaluating you, the program asks questions about the satisfaction level of your current situation and then about your ideal situation. If the two are very different, you're encouraged to think about what you could do to bring them closer together.

No guidance counselor or computer program works mir-

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acles. All the program can do is force you to sit down and ask yourself, in logical order, questions that may be vague or disorganized in your mind. It forces you to examine yourself and nudges you toward making decisions you really need to make. By directing questions to you (using your name), the computer strips away any excuses or defense mechanisms you may have been hiding behind. It asks you questions you may have avoided asking yourself.

For people who are already quite introspective, *Career Planning* probably won't say much that you don't already know about yourself. But for people who haven't sat down and figured out in which direction they're heading, it can help organize those thoughts and provide valuable tips.

CBS Interactive Learning, for Apple II, IBM PC.

Other programs to look for: Jobfinder (*Compu-Job Software*), for IBM PC. This program helps you write your résumé and cover letter, print a personal history report, and pick the best job offer.

Design Your Own House

Anybody who's ever lugged a 500-pound couch from one room to another only to find out that it still looks lousy will appreciate Avant-Garde's *Design Your Own Home* series. Now, instead of carrying all that furniture up and down the stairs, you can just slide it around your computer screen.

Design Your Own Home is actually three programs: *Architectural Design*, *Interior Design*, and *Landscape Design*.

Architectural Design helps you design the house itself. The program contains 126 different detail shapes that can be used to make up a floor plan. These shapes can be rotated or arranged on the screen in any way you'd like. The computer automatically calculates distances, diagonals, and angles. Feet and inches can easily be converted into decimal or metric numbers. You can observe your design from a top view or a side view.

Nice floor plan. But what about that truckload of furniture that just pulled up outside?

Interior Design allows you to move your simulated furniture all over the house to decide where it fits best in your available space. Kitchens, living rooms, bedrooms, and bathrooms can all be laid out to your specifications. You can even experiment with different color schemes and put multicolored patterns on the walls to simulate wallpaper. If you don't like the way your wife or husband has arranged the furniture, rearrange it onscreen and then have the argument.

Your house is looking pretty good now. But a house isn't a home until you get the exterior looking the way you want it.

Landscape Design contains several outlines of "canned houses," or you can draw an original outline of your own home. Then you can position simulated plants, flowers, trees, and shrubs around the grounds. To help with your future planning, you can even make the foliage larger to see how it will look in a few years.

Avant-Garde, for Apple II, IBM PC.

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New home buyers who own a Macintosh aren't neglected. Hayden Software has turned the Mac into a computer-aided design tool. Their *Home Design* contains over 800 three-dimensional images of chairs, tables, fireplaces, hot tubs, and other home furnishings. And that includes 112 different kinds of chairs.

For more professional purposes, Hayden's *da Vinci* goes even further. It's a series of five packages consisting of predrawn and professionally rendered graphics. You can take a door, for instance, and change its size, stretch it, rotate it, and then insert it into your house design. The *da Vinci* programs can be used to design building exteriors, landscapes, interiors, offices, restaurants, even an entire city.

Moving furniture around with a computer is so effortless that it may be hard to tear you away from the screen to take your real furniture out of its boxes.

Hayden Software, for Macintosh.

Other programs to look for: Room Arranger (Henry M. Hufnagel), for IBM PC.

Remote Control Your Home

Remember the Jetsons, the cartoon family of the future? ("Meet George Jetson....") Their food was cooked at the touch of a button. Mechanized mops flew around cleaning their house. A machine did Elroy's homework in seconds. In 1966, this was funny. In 1986, it's almost reality. The computer (Elroy's word processor?) is making it possible to have a completely automated house.

You can attach your computer to a home control device that will do things even George Jetson wouldn't have dreamed of. We're still a few years away from houses that clean themselves or robots that take out the garbage, but that little silicon chip inside your computer can do a few handy things around the house right now.

SmartHome I is designed for people who want a home control system, but don't know a lot about electronics. The system consists of software and an external box that plugs into the serial port of your computer. It works independently of the computer, so you can use the computer without having to disconnect *SmartHome I*. The system is icon-based, so it's easy to use a joystick or mouse to "program" it, even if you don't know a thing about programming. It's also completely wireless, so you won't have a snake pit of cables running around the furniture. Radio signals transmit information from *SmartHome* to your appliances.

While you're driving home from work, *SmartHome* can start cooking your dinner and turn on your driveway lights, television, radio, or air conditioner. Just about any electrical appliance, from coffeepots to automatic drapery openers, can be hooked up with *SmartHome*. You can turn your tape deck into an alarm clock and have Bruce Springsteen scream you awake in the morning.

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It also functions as a security system. Sensors can be placed in windows and doors and will sound an alarm if these are opened when you're not home. An infrared motion sensor will detect body heat and alert you in case of a break-in. This can come in handy if you've got a vacation home that's empty for long periods of time. By programming a few appliances to turn off and on at different times during the day, you can make even a completely abandoned house look and sound lived in. If there's a fire, the smoke detector won't just beep—it will also turn on all the lights so that you can see to escape and automatically call the fire department.

CyberLynx, for Apple II, IBM, Macintosh.

Other programs to look for: X-10 Powerhouse (X-10), for Apple II, Commodore 64/128, IBM PC, Macintosh; Jance Hard Wire Security System (Jance Associates), for Commodore 64/128, VIC-20.

Calculate Your Mortgage Payments

The surge of low, low mortgage rates in 1986 has caused a lot of people to reach for calculators and see if they can afford the home of their dreams. Too bad there isn't some computer program that can do all that mortgage number crunching, huh?

There is. And it does the job in about a millionth of a second. Navic Software's *Mortgage Maker* won't pay for your house, but it will help you figure out how *you're* going to pay for it. You simply punch in your down payment, the amount you're borrowing, and the terms of the mortgage. The computer instantly calculates the monthly payment on the loan.

Let's say you want to buy a \$125,000 house and you can afford a down payment of \$30,000. Therefore, you're borrowing \$95,000. It'll be a traditional 30-year mortgage. The latest interest rate is 9.5 percent.

Before you can blink, the computer tells you that your monthly payments will be \$798.81.

The great thing about the computer is that you can change these numbers and instantly see what happens. Now let's say that while you're house hunting, the mortgage rate jumps to 10.3 percent. And let's say you suddenly inherit a cool \$10,000 from a long-lost relative and add the money to your down payment. No problem.

You blink again and the computer tells you that with these new conditions, your monthly payments will be \$719.86. You can juggle the numbers endlessly to work out a formula that gives you a mortgage you can work with.

That helps, but you need *more* information. You want to know how much of your payments will be going toward repaying your loan and how much will be paying off the interest. You want to see how your principal gets smaller as the years go by.

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Again, no problem. *Mortgage Maker* will take that \$719.86 you're paying every month and print out your entire 30-year amortization schedule. For any month in the life of the loan, you can check the interest, the principal balance, and how much you've paid to date. So, in the case of this mortgage, when you make your first payment, \$686.67 will be interest, and a whopping \$33.19 of your principal will be paid off. The balance of your loan will be \$79,966.81.

At the end of the year, the computer will tell you that you've paid \$6,169.53 in interest. And by the end of the decade, you will have reduced the principal of your loan to a mere \$77,572.61.

Who cares about all that stuff? Well, if you decide to sell the house after a few years, you'll want to know how much of the loan has been repaid so you'll know how much cash you're due. And of course, interest payments on mortgages are tax-deductible. *Mortgage Maker* shows you exactly how much interest you'll be paying for each of the next 30 years. When you're doing your taxes, you'll have the figure immediately at hand.

One thing the program doesn't do is calculate variable-rate mortgages, which are much more complex. But what do you expect? Computers are only human.

Navic Software, for Apple II, Commodore 64/128, IBM PC.

(Incidentally, I asked Navic's Vic Ratner what *Navic* means. He said, "It's just a name that was chosen to be certain it wouldn't conflict with anyone else's name. It's getting hard to pick corporate names these days that haven't already been picked.")

Other programs to look for: 64 Pak (*Practicorp*), for Commodore 64/128; Mortgage Switch Calculator (*AIS Microsystems*), for Apple II, IBM PC, Macintosh.

Compare Long-Distance Phone Rates

Joan Rivers says you should choose MCI as your long-distance phone carrier. Cliff Robertson says you should choose AT&T. You're going to have to choose *somebody*. Who do you believe, Joan or Cliff?

It might be smarter to believe *TeleDoll*. This program doesn't do TV commercials or host talk shows. It just tells you how much you'll pay for a call with any of the myriad of phone companies out there. *TeleDoll* is short for "telephone dollars." The program analyzes your actual long-distance telephone usage and will provide comparative costs from different companies for one call, ten calls, or even a year's worth of telephone calling.

For example, let's say you live in Philadelphia and you want to call Cincinnati. Which service offers the lowest rate?

First, you tap in the Philly area code (215) and your phone number. (By the way, did you know that there are 15 Philadelphias in the U.S.? You could look it up.) Then you tap in the number you're calling in Cincinnati (513) ____-____.

Let's make our fictional phone call 49 minutes long. We'll make it on a Wednesday, at 2:23 p.m. That sounds like a good time to call Cincinnati. All this information is necessary, of course, to calculate the cost of the call.

Now the computer does its business. Here's how much the call will cost from five well-known companies:

AT&T	\$18.79
GTE Sprint	16.94
ITT	17.47
MCI	18.05
Western Union	17.71

Sorry, Joan. MCI came in *fourth*—\$1.11 more than Sprint, which is the cheapest service for this particular phone call.

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Obviously, you may find that the most advertised service doesn't give the best rate. We looked at only 5 companies here, but *TeleDoll* contains the data for 17 carrier services. Best of all, your comparison shopping takes about a minute.

Saving a few cents on a single call now and then certainly doesn't justify buying a \$30 computer program. But in the long run, it may. With *TeleDoll*, you can input your last month's worth of phone calls according to your bill, and it will show you what the bill *would have been* from each company. Small businesses can input a few week's worth of calls and let the computer project costs for the whole year from each company. The savings can be substantial.

In their quest for your business, phone companies change their rates frequently. *TeleDoll* gets updated every 6–8 weeks. Registered *TeleDoll* owners can purchase an update at any time for \$8.50.

Even if you've already picked your phone service, *TeleDoll* may still help you. If you ever move, start a business, add a phone line, or buy a house, you'll have to go through the process of choosing a primary phone carrier. Also, many people don't realize that even after you make your choice, you can still place a call with any of the other carriers simply by dialing a few digits before your number.

Don't let Joan or Cliff tell you which phone company to choose. Before you reach out and touch anyone, reach out and calculate how much it's going to cost.

Suresoft, for IBM PC.

Save on Your Electric Bills

The electric company isn't gonna be happy about this.

The Reduce System may be able to knock back your electric bill by as much as 30 percent.

Electric rates, like telephone rates, often vary at different hours of the day and on different days of the week. If you can schedule it so that your appliances turn on during the cheap times and off during the expensive times, you can save a lot of money. *Reduce* uses the computer to keep track of time, day of the week, and month. It automatically turns the juice on and off for your appliances based on a preprogrammed schedule, which you determine.

The system can handle as many as 256 appliances simultaneously (what a madhouse *that* must be). But you'll probably use it for just two—your thermostat and your hot water heater. They eat up 80 percent of your electric costs anyway.

Basically, *Reduce* fakes out your thermostat. A small heating element is mounted under the thermostat. The computer makes it heat up, and the thermostat thinks the room temperature has gone up, so it shuts off the heat. When it's time for the room to actually warm up, the computer shuts the heating element off and the thermostat thinks the room temperature has gone down. It then turns the heat on.

Instead of using infrared signals or snaking wires, *The Reduce System* sends a 60 hertz pulsed signal right through your home's wiring. In this way, your wiring works almost like a telephone wire. This signal gets picked up by modules that plug into the wall along with your appliances. So when the computer sends a signal—TURN ON!—any appliances attached with modules follow the order. The thermostat and hot water heater modules are included in *The Reduce System* (\$250). Extra modules cost \$18–\$20.

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Here are a couple of examples of how *Reduce* can save you money:

- On very cold days, most heating systems have to use a backup electric resistant heating system to bring the temperature up. The backup system is very inefficient and expensive to run. But the computer can override this system and bring the heat up very slowly—one degree every few minutes. Because the backup system doesn't need to be turned on, you use less electricity. It's sort of like accelerating a car. A quick acceleration burns more gas than a slow, steady acceleration.

- Some electric companies add a surcharge when your usage hits 10 kilowatts for any 15-minute period. This is called Peak Load Demand. To make sure you never hit the peak, the computer monitors your usage constantly. If the water heater is on and the heat kicks on, the computer will automatically turn off the water heater. So no two major appliances in the house are ever on simultaneously.

People with all-electric houses will reap the greatest benefit from *The Reduce System*, especially during the winter months. You may have to make a few sacrifices in your life, though. To get the greatest benefit from *Reduce*, you can't do things like wash your clothes during the peak electricity periods. "You have to put up with a little bit of lifestyle modification to save a substantial amount of money," says Jay Helwig of Jance Associates. (Helwig's house, by the way, is computer-controlled right down to the sprinkler on the front lawn.)

I know what you're thinking. How can this thing reduce your electric bills if it requires a computer to run it 24 hours a day? That must cost a fortune in electricity.

Nice try. In a 24-hour period, a Commodore 64 eats about 35 cents' worth of juice.

Jance Associates, for Commodore 64/128.

Other programs to look for: Household Electrician (*Sharedata*), for Apple II, Commodore 64/128.

Plant a Garden

Is your garden infested with smut? That's a fungus disease that attacks corn. Or maybe you've got problems with root rot, fusarium wilt, or white grub. Have stink bugs, pea weevils, Colorado potato beetles, cabbage root maggots, or European corn borers invaded your backyard?

You could beat these problems and plant your own customized garden with the help of *Plantin' Pal*. It's aimed at folks who don't care about word processing, spreadsheets, or games. They just want to plant and harvest their own vegetables.

On the surface, gardening may seem a dumb use for a computer. Actually, it makes a lot of sense. Each garden is different. Each is a different size, contains different plants, is located in a different area, and has different problems. The computer is an excellent tool that can take all these factors into account and let you know how to plant a garden that will have the best chance of reaping a good crop.

Say you live in the northeastern United States. The weather varies drastically from one area of the country to another. *Plantin' Pal* will tell you the earliest and latest dates you can safely plant your garden. Because some vegetables grow better in warm climates, while others thrive in the cold, the program will also tell you which ones you should plant, depending on where you live. Rhubarb, for instance, doesn't grow well in temperatures over 75 degrees. If you tell your computer you live in New Mexico, *Plantin' Pal* will tell you to forget about plantin' rhubarb, pal.

It will also customize your garden to your family. Once you've decided to plant tomatoes, for instance, the computer will ask you how many people you plan on feeding. Punch in the number, and the computer will let you know how many tomato plants you need to plant and calculate how much space they'll take up in your garden.

The garden itself will be designed by the computer with your help. You type in the exact dimensions, and the program

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will create rows far enough apart to encourage growth, but close enough together to guarantee you a bumper crop. *Plantin' Pal* also gives you tips on watering, fertilizing, and getting rid of insects and diseases for each of 40 different vegetables.

Home & Hobby Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Ortho's Computerized Gardening (*Ortho*), for Apple II, Commodore 64/128, IBM PC, Macintosh; The Gardener's Assistant (*Shannon Software*), for Apple II, Commodore 64/128, IBM PC.

Cook Up a Storm

“Chickens, pigs, cows, and fish are terrified of our software,” claims Virtual Combinatics. Why? “Because our new *Micro Cookbook* makes it easier than ever for you to bake, broil, roast and fry ‘em.”

They just might be right. The program contains over 150 classic recipes for all kinds of foods, and they’re a little easier to find than rifling through your box of splattered index cards. Just hit a few keys and your recipe jumps to the screen. You can call up any recipe by typing its name (Veal Picatta, for instance), one of its ingredients (ground beef), or the category of food (Mexican). You’ll find Italian, French, Oriental, and American dishes in the *Micro Cookbook* database. You can add your own creations to the program, modify the ones that are there, or delete the ones that sound better on paper than they taste at the table.

You can also tell the computer how many people you’ve got to serve, and it will calculate how much of each ingredient in a recipe you’ll need. And for shopping trips, you can pick a few recipes, and the computer will print out a shopping list of ingredients to take to the store with you.

Once you start cooking up a storm, you’ll have a problem—leftovers. Don’t worry about them—you can tell *Micro Cookbook* what kinds of foods you’ve got hanging around the refrigerator, and it will tell you what recipes you can make with them. That can come in handy if you’ve got to cook and can’t get out to the grocery store.

Also included with the program is a mini-reference section for home chefs. You’ll find a calorie and nutrition guide, a table of measurements and metric equivalents, a table of ingredient substitutions, and a guide to buying, storing, and cooking techniques. Virtual Combinatics publishes additional inexpensive recipe disks to use with *Micro Cookbook*. The most recent one contains recipes for special diets (dairy-free, egg-free, wheat-free, low sugar, and low cholesterol).

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All in all, it's a pretty appetizing little program. Using a computer to store recipes is one of those things that are used as examples to point out the frivolity of using a computer in the home. But it should be noted that Virtual Combinatics has sold well over 100,000 copies of this program, so some people must be getting use out of it.

Micro Cookbook probably won't turn you into the next Julia Child, but it might help you rise above the ranks of the daily macaroni and cheese connoisseurs. On the other hand, maybe index cards suit you fine.

Virtual Combinatics, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: The Complete Computer Recipe System (*East Hampton Industries*), for Apple II, Commodore 64/128, IBM PC; My Very Own Recipes (*Le Com Enterprises*), for Apple II, IBM PC, Tandy 1000, 2000; The Cupboard Cook (*TBR Inc.*), for TI-994/A; The Electronic Cookbook (*Arcturus Software*), for Commodore 64/128; Chocolate Bytes (*The Software Toolworks*), 100 chocolate recipes for Apple II, IBM PC; Variable Feasts (*Brøderbund*), for Apple II, IBM PC.

Prepare Your Income Taxes

Fiddling with your taxes is illegal, but fiddling with your tax *return* is perfectly okay. And if there's one thing in the world that's good at fiddling with numbers, it's a personal computer.

How much should you put into your IRA this year? Should you wait until next year to buy that new car? When should you sell your stock in Amalgamated Furball? These are the kinds of questions the computer can help you answer.

For example, let's say you want to know if you should take a long-term capital gain this year. With the computer, you can simply create two tax scenarios—one in which you take the capital gain and another in which you don't. The computer will calculate them both in seconds, and you'll see which situation is most advantageous for you.

Tax software can be something like a simulated accountant. For instance, *J.K. Lasser's Your Income Tax* starts by asking a series of yes/no questions about your finances. This allows the computer to determine exactly which forms you'll need to figure your taxes. Replicas of all 28 tax forms and schedules are contained in the program.

With the forms onscreen, you just plug in the right numbers. The computer does all the arithmetic, so you don't have to worry about making a mistake that will then mess up ten other calculations. And get this—when you've completed your taxes, you can print the whole thing out directly onto the official IRS forms.

Sounds great, doesn't it? Well, hold everything. We haven't gotten to the *disadvantages* yet.

For one thing, the computer may not be faster than your accountant because it may take you hours just figuring out how to use the program. You may not be saving any money either. Tax software runs from \$50 to \$200. (*Lasser* sells for \$70.) And as tax laws change every year, you'll have to pay a fee for the updated version.

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More importantly, tax software doesn't give advice. If you've got a lot of questions to ask, it's tough to beat a human being. The computer doesn't care how much you have to pay. The computer won't think to suggest that your subscription to *Snail World Monthly* may be tax-deductible. The computer won't go to bat for you in case you get audited by the IRS, and it won't visit you in jail either (then again, neither will most accountants).

More than anything else, the computer doesn't understand that fine line between a legitimate business expense and embezzling money from the government.

If you use the short form, there's probably not much advantage in computerizing your taxes. And if your taxes are very complicated, you'll probably want your accountant to do the work anyway. But if your needs are somewhere in the middle, the computer can be a big help. You may consider doing a rough draft of your tax return on the computer and then going to your accountant. That could save you a lot of money because your accountant will be able to finish your return very quickly.

Oh, in case you were wondering—yes, tax software is, at this writing, still tax-deductible.

Simon & Schuster, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: The Tax Preparer (*Howard-Soft*), for Apple II, IBM PC; The Tax Advantage (*Arrays*), for Apple II, Atari, Commodore 64/128, IBM PC; Pay Less Tax II (*Pay Less Tax Inc.*), for Apple II, CP/M, TRS-80.

Find Out How Much Life Insurance You Need/ Plan Your Retirement

A strange phenomenon occurs when a young person graduates from college, gets a job, and starts accumulating credit cards and the other trappings of adulthood—life insurance agents start calling up on the phone. There you are, just starting out in the real world, and already people want you to start thinking about old age, death, and what's going to happen to your wife and kids. It's frightening, and when these salespeople start throwing their facts and figures at you, it can be very intimidating.

There aren't any computer programs that will shield you from insurance agents or slow the aging process, but there are several that will help you plan your retirement as painlessly as possible.

Life Insurance Planning helps you determine the amount of life insurance protection you really need. For the program to be most effective, you have to sit down and tell the computer just about everything about your present and future finances: how much money you have in the bank, other cash assets, income, real estate and personal property, mortgages, loans, expenses, and college funding for your children. Calculating your "post-death net worth" can be kind of depressing, but it's important. You'll also be asked to enter the number of years until you retire, your retirement income, income requirements for your surviving spouse, and your life expectancy (see "Find Out How Long You'll Live"). The computer analyzes all that information and tells you how much life insurance you'll need.

Retirement Planning is somewhat similar. In this program, you're also asked the year you plan to retire, your estimate of future inflation, and a few other financial particulars. The program then determines how much you'll need to save each

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year in order to afford your projected retirement budget. It will also show you how your savings will grow on a yearly basis.

Using *Retirement Planning*, you may find that the \$2,000 you're socking away in your IRA each year isn't enough to accumulate the savings you're going to need for a comfortable retirement. If this happens, the computer will offer some suggestions that will help you achieve your goal. You may be advised to postpone your retirement a few years, decrease your retirement budget, or put more money away.

The power of the computer allows you to play with all these numbers and see the results. What if I put my money in a high-interest savings account? What if I increase my monthly savings by \$50 or \$100? Agents from the life insurance companies probably won't want to waste their time doing all these "what if" calculations for you. They probably want to sell you whatever will bring them the largest commission. With *Life Insurance Planning* or *Retirement Planning*, you'll be more informed the next time a salesperson calls.

Advanced Financial Planning, for Apple II, Atari, Commodore 64/128.

Other programs to look for: *Get Rich! Insurance Planning (Arrays)*, for Apple II, Atari, Commodore 64/128, IBM PC; *Golden Years (JCW Enterprises)* for Apple II, IBM.

Find Out How Long You'll Live

How long can you expect to live? Your computer can tell you in about five minutes.

Life expectancy is dependent on many factors. Practicorp International's *64 Pak* asks you 21 specific questions about yourself, then does an instant analysis of the answers and calculates how many years a person with your particular lifestyle can expect to live. It may sound a bit morbid, but actually it's fun.

Do you sleep more than ten hours a night? Have you had a speeding ticket in the last year? Do you live in a small town or in a city with more than two million people? These are some of the not-so-obvious questions that will influence your life expectancy. Naturally, the program asks your current age, your sex, how much exercise you get, how much you smoke or drink, and whether or not you're overweight. You'll also be asked about your family: How old did your grandparents live? Has anyone in your family had cancer, a stroke, or diabetes? Do you live with a spouse or by yourself?

Don't take this test if you have any illusions of immortality. I don't expect to live forever, but there's something disturbing about having a computer state so matter-of-factly that I probably will die at the age of 80. And telling me that an 80-year-old man will outlive 75 percent of all men and 53 percent of all women is not all that reassuring. Why not 85? Is living to the age of 90 that much to ask?

Just for the fun of it, I invented a fictional character to see how long *he'd* live. He smokes two packs of cigarettes a day. He drinks a quarter of a bottle of liquor a day. He never exercises. Everybody in his family died from some horrible disease. He's intense, aggressive, easily angered, and generally unhappy. He's been living by himself for years. He never goes to the doctor, and he's more than 50 pounds overweight. This poor guy even gets speeding tickets.

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The computer told me that the unlucky fellow could expect to live to the age of 25. Suddenly the thought of being an 80-year-old man doesn't seem so bad.

Practicorp International, for Commodore 64/128.

Other programs to look for: Life Expectancy (*Paul's Electric Computer*), for Apple II.

Write Your Own Last Will and Testament

So far, in this chapter, we've seen how to use a computer to trace your roots, track your baby's development, choose the right college, create the perfect career, and calculate how much life insurance you'll need. Who says there's no use for a computer in the home? A computer, it seems, can come in handy from the day you were born until the day you die.

It may sound a little morbid, but your computer can be helpful even *after* you die. You can use it to write your will.

Nobody likes to discuss death and dying. Maybe that's why 66 percent of all adults don't even bother to write a will. They put the grisly business off or just assume everything will be taken care of after they're gone.

That's a bad idea. Dying without a will is just an added burden on your loved ones, and you may hurt them financially—the government often takes a larger portion of your assets if you don't leave a will.

People who *do* write a will pay as much as \$200 to consult with a lawyer on this less-than-joyous subject. If you move from state to state or if other life circumstances change over the years, you'll have to revise your will over and over again, which costs more money. In your lifetime, you may spend thousands of dollars to write this simple document.

WillWriter, by Nolo Press, costs \$40. You can use it an unlimited number of times to draw up your own will, wills for your family, or even wills for your friends. You can even throw a will-writing party, if you'd like.

Who would have thought that writing your own will could be fun? *WillWriter* doesn't bombard you with meaningless legalese. It takes you step by step through a series of understandable questions, written in plain English. The way you respond to each question determines which questions follow. You'll be asked where you live, your marital status, and if

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you'd like any personal belongings distributed to particular individuals after you're gone. So if you wish to leave your sister the nine-foot ball of twine that you've been collecting for 30 years, you can enter that information into the program and she'll be sure to get it.

When you're finished (writing the will, that is), you can print out a paper copy. The program automatically inserts any necessary legal terminology, and this has been deliberately programmed so that it can't be altered by yourself or anybody else. It accommodates differing state laws around the country, and satisfies the legal requirements of 49 states and the District of Columbia (Sorry, Louisiana). *WillWriter* can write a perfectly legal will for married or single people, with or without children.

Lots of computer programs claim to be user-friendly. This one is idiot-proof. I assure you, if you can't figure out how to use *WillWriter*, you don't need a will anymore. You must already be dead.

The best thing about *WillWriter* is that you can change it anytime you want. When your children grow up, for instance, you can delete all the child guardian clauses. Better yet, if somebody in the family gets on your nerves one day, you can easily cut him or her from your will with a few simple keystrokes. Then you can insert a different beneficiary.

That's one way to keep your family on their toes.

WillWriter (Nolo Press), for Apple II, Commodore 64/128, Macintosh.

Other programs to look for: *Wills* (Lassen Software), for IBM PC; *Wills* (Haba Systems), for Macintosh; *Disk Will* (Self-Help Legal Services), for Apple II, IBM PC, Macintosh, TI Pro.

CHAPTER 2

CHAPTER 2

Stare at a Fish Tank

When the personal computer was invented, various visionaries saw it as a tool that could process words, analyze financial spreadsheets, store huge amounts of information, and improve the quality of our lives. But only now has the true purpose of this technological marvel been revealed—to let us stare at fish swimming around in a simulated fish tank. The totally off-the-wall *Fishies* turns your computer screen into an electronic aquarium.

Think of it: No more rinsing algae off those stupid little fake rocks. No more captive snails stuck in noisy bubblers. No more kamikaze goldfish flinging themselves out of your tank at night, and no more scraping them off your good furniture in the morning.

You don't even have to feed *Fishies*. Just load the disk, sit back, relax, and enjoy the show. You'll see swordtails, angelfish, goldfish, sea horses, tiger barbs, and diamond fish swim past your screen as they peacefully skim underwater ferns and think about whatever it is that fish think about. *Fishies* will keep you mesmerized and relaxed, providing you with all the fun of a real fish tank without the mess and bother. It will give you something to do when you're lonely, and it will keep the kids off the street.

But, wait, that's not all the excitement. Hit the F key on your computer, and the fish rush to the surface and gobble simulated food pellets that you would be feeding them if, of course, they were real fish. Hit the T key, and they rush to the screen as if you had tapped the glass with your finger. And if you press the space bar, you'll be treated to a special event—a colorful high-resolution scuba diver, a submarine, or a mermaid will swim by.

(If they *really* wanted to make it realistic, you'd be able to hit the E key and watch the fish all start eating each other or the D key and watch them all go belly up.)

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Fishies is just ridiculous enough to be a fun novelty program.

Jersey Cow Software/Cognetics, for Apple II.

Other programs to look for: *If you prefer your pets to be alive, take a look at Pets, Ltd. (MECC), for Apple II. It helps young people experience what choosing and caring for a pet might involve.*

Manage Your Hog Farm

You won't find AgDisk's *Swine Management* at the top of the software bestseller charts. You won't see it reviewed in the computer magazines. You won't see it displayed in the window of your local computer store. But if you're a hog farmer, it may be the difference between turning a profit this year and losing money.

Swine Management is aimed at today's high-tech hog feeders who want to streamline operations and improve their bottom line. The program is divided into four sections, corresponding to the four key areas of swine production:

- **Hog Selling Decisions.** Analyzes when you should feed and when you should sell. A report is generated that calculates sale price per head and break-even sale price per head at a later sale.
- **Swine Ration Analysis.** Allows you to balance your rations quickly and easily to create the most efficient mix. The analysis of rations includes total cost, weight, energy level, and percentages of fat, fiber, protein, lysine, calcium, and phosphorus. Pigs, it seems, eat better than we do.
- **Feeder Pig Analysis.** Helps you determine the return on your investment when buying and selling feeder pigs. The computer calculates profit and loss, operating costs, and break-even price.
- **Sow Index Calculator.** Compares the overall productivity of each sow and gilt (a young female swine) and provides you with an indicator of which needs to be culled.

AgDisk, as the name suggests, specializes in agricultural computer software. The company markets 35 programs for many aspects of farming, such as *Corn/Soybean Management*, *Cow-Calf Herd Management*, *Crop Management*, *Farm Accounting*, *Farm Inventory*, *Dairy Herd Management*, *Cattle Record Keeping*, and others.

AgDisk, for Apple II, IBM PC, TRS-80.

Save an Endangered Species

The red-cockaded woodpecker is dying. This particular species needs the old-growth pine forests of the South for food, nesting, and a place to have its young. Coincidentally, the old-growth pine forests are also the best trees for logging. As we replace the old trees with new ones, we're killing off the woodpeckers.

Don't blame it on Gary Yaker. His four-year-old-company—Yaker Environmental Systems—markets 40 programs that combine technology and ecology. Yaker, who taught environmental sciences for 15 years, aims to educate people about their environment and increase their respect for living things.

One of Yaker's bestselling programs is *Endangered Species*. First, you select an animal (woodpeckers, alligators, whales, and others are included), and the computer shows you where they are located in the world. Then you have to select the factors which affect these species and are causing them to be endangered.

"Habitat destruction" is the leading cause of endangerment, according to Yaker, but many species are also having a rough time from water pollution, poaching, indiscriminate killing, the pet trade, exotic predators, commercial hunting, poisoning, pesticides, and interspecies competition. The computer provides a graphic simulation of how your decisions in the year 2147 could affect the future of endangered species in developed and undeveloped countries.

The goal is to teach people the reasons animals become endangered. "When we hear a species is endangered, we tend to think it just happened out of the clear blue sky," says Gary Yaker. "But there are specific events that cause this. The idea is to give some basic, solid information on what these factors are and to get you thinking about what can be done."

◆ *Animal Programs* ◆

Among Yaker's other offerings: *Stalking the Whitetail Deer, Outdoor Orienteering, Woods & Wildlife, Balance of Nature, Human Populations, Oh, Deer!, Ducks!, Biomes & Food Webs, Fish & Fishing, Hunter Education, Nature Hike, Wilderness Trail.*

Yaker Environmental Systems, for Apple II, Commodore 64/128, CP/M, IBM PC.

Other programs to look for: The PETE (*Preserving Earth Through Education*) Pack (*The Humane Society of the U.S.*), for Apple II.

CHAPTER 3

Teach Yourself

Learn to Type 100 Words a Minute

There are only a few things in this world that make perfect sense. Newton's laws make sense. Putting together chocolate chips and cookies makes sense. Daylight-saving time makes sense, in an odd sort of way. And using a computer to learn how to type makes great sense.

It's so logical—You use a computer by tapping on keys that are nearly identical to a typewriter's keyboard configuration. You look at a screen when you hit the keys, so you can't look at your hands. This forces you to memorize the placement of the keys. Add the fact that a computer is interactive and can give feedback when the correct or incorrect keys are hit, and you've got a perfect way to teach typing. And anybody who's going to be doing a lot of computing is going to need to know how to type.

Maybe that's why *New Improved Mastertype* is one of the bestselling educational software packages in the short history of consumer computers. It turns a typing lesson into a fast-action arcade-style game. In the center of your screen is a large spaceship. The rest of the screen is black, except for stars twinkling in the sky. Suddenly a rocket, an asteroid, a satellite, and another spacecraft appear at the four corners of the screen. Accompanying each one is a group of letters or a word.

You've got to type out these letters on the computer keyboard. When you correctly type them and hit the space bar, your ship shoots out a blast of fire and wipes the enemy off the screen. If you make a mistake, the rocket or spacecraft slowly inches toward your ship. If you're fast and accurate, you'll blow the spaceships up. If you're not fast enough and one of them reaches the middle of the screen, your ship blows up and you receive the message which explains the end of your civilization in very simple terms—"The words won."

Death can be an excellent motivation for learning how to type.

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Anyone from beginner to expert can use *New Improved Mastertype* to improve his or her typing. There are 18 lessons. In the first lesson, for example, just the “home keys” (A, S, D, F, G, H, J, K, L, and ;) come shooting out of the corners of your screen. In subsequent lessons you’ll encounter the other rows of characters, as well as three-letter words, six-letter words, and finally nine-letter words. You can also elect to practice just the punctuation keys, number keys, or frequently used computer terms. You can even enter a list of your own 40 words—your friends’ names, easily misspelled words, or your favorite obscenities.

The computer will tell you how many words you’re typing per minute and how many mistakes you’re making. The program also lets you push yourself by adjusting the speed of the spaceships as high as 210 words per minute. If you ever get that fast, call up the *Guinness Book* people. The world’s fastest typist, a 64-year-old grandmother named Barbara Blackburn, only types 200 words per minute. And she travels around the country giving demonstrations of *New Improved Mastertype*.

Scarborough Systems, for Amiga, Apple II, Atari, Commodore 64/128, IBM PC.

Other programs to look for: Typing Tutor III (Simon & Schuster) for Apple II, Commodore 64/128, IBM PC, Macintosh.

Learn to Read 1000 Words a Minute

Here's a depressing thought—There will be about 40,000 books published in the United States this year, but if you read at the average rate of 250 words per minute, you'll probably get through only 2500 in your *entire lifetime*. This can be good motivation to take a speed-reading course. Many of us have a pile of books, newspapers, and magazines all over the house that we never seem to have time to even *look at*.

There's nothing magical about doubling or even tripling your reading speed. The main idea is that most of us read... one...word...at...a...time. This is what slows us down. Research has shown that our brains are capable of taking in clusters of words or even incomplete words and assembling them into a coherent thought. As an example, read this passage:

*L-st nt—I had a dre-m th-t I w-s an elder— man on
my d—thbed. J-st as I was ab—t to die, Al—n Funt
jump— out fr-m behi-d a wa-l a-d expl—n-d th-t my
wh-le life w-s one l-ng episo-e of C-ndid Cam—a.*

There were 32 letters missing from those two sentences, but you probably read them perfectly. Your brain automatically filled in any letters that were missing. You don't have to see every letter or every word in order to get the meaning. You'll read much faster if you read only what you *have* to read.

Micro SpeedRead uses this idea to help you zip down the pages. Probably the most familiar strategy is Z-patterning, in which you train your eyes to scan a line from left to right, then to scan diagonally backward down the next line, and then to scan the third line normally. Speed-readers will usually trace this Z-pattern across the page with one of their hands, so it looks like they're reading with their fingers.

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So who needs a computer program? We could learn the same thing from a book. After all, we do most of our reading from paper, not green phosphor screens.

Speed-reading by computer has several advantages over a book. First of all, the computer has an internal stopwatch, which can time you and instantly calculate the number of words you're reading per minute. More importantly, the computer can scroll passages of text past your eyes at whatever speed you tell it. Of course, being able to work at your own pace and take the course in your own home are also advantages of speed-reading by computer. And computer programs cost less than most speed-reading courses.

Micro SpeedRead takes advantage of these capabilities to give you a complete speed-reading course. First, you'll estimate your present reading speed; then you'll learn about clustering words and ideas, various pacing patterns, and skimming and scanning; and finally you'll find out how much your reading speed has improved.

Your eyes and brain are approaching the end of this section now. You've probably been at it for a couple of minutes. While every writer hopes that readers are hanging on to every word, you could have actually skipped many of my words and knocked off this section in about 30 seconds. In fact, if you were a speed-reader, you'd probably have finished reading this book by now.

CBS Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Evelyn Wood Dynamic Reader (*Timeworks*), for Apple II, Commodore 64/128, IBM PC, Macintosh; Speed Reader II (*Davidson & Associates*), for Apple II, Commodore 64/128, IBM PC, Macintosh.

Learn a Foreign Language

When President Carter visited Poland in 1977, he tried to express his wish to “learn your opinions and understand your desires for the future.” Unfortunately, his words were translated as, “I desire the Poles carnally.”

That’s just one story of a bad translation. When General Motors introduced their Chevy Nova, it didn’t occur to anyone at the company that *Nova* in Spanish means “it doesn’t go.” Not surprisingly, sales weren’t so hot in Puerto Rico or Latin America. GM flubbed another one when their “Body by Fisher” slogan was translated “Corpse by Fisher” in Flemish.

And who can forget the famous Pepsi ad campaign in which confused Chinese soft-drink lovers thought “Come Alive with Pepsi” meant “Pepsi Brings Your Ancestors Back from the Grave”?

It all goes to show that Americans are terrible at languages other than English. (The English would probably say we don’t shine at *that* language either.) High school classes don’t seem to work. Books, audiotapes, and videotapes haven’t worked. Maybe computers will work.

Fifty-five-year-old Gessler Publishing does nothing but sell foreign language software. At last count they had 250 titles covering just about every language spoken on the planet. Specialty software on grammar, vocabulary, and refresher courses is available. For adults, they’ve got *Gutenberg*, a word processor that can load language fonts for French, Spanish, German, and ten other languages. For children, they’ve got the ever popular *La Guillotine* (Hangman, *à la française*). Foreign versions of Trivial Pursuit are in the works.

Real language buffs can say *au revoir* to boring drills and exercises. Gessler’s programs try to make learning languages fun. Their latest is *French Micro Scrabble*, a clone of the 90-million-selling game we all know and love. The computer ver-

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sion has a built-in 20,000-word French vocabulary. You can play against the computer, or four players can compete against each other. No English words are allowed.

Gessler has also translated top-selling American programs into other languages. Spinnaker's *Snooper Troops* is available in German and French. Fans of Brøderbund's *The Print Shop* can now create their own greeting cards in French, Spanish, German, Italian, or Latin. Gessler recently completed a translation of Epyx's popular adventure game *Temple of Apshai* into French (*Le Temple d'Apshai*).

"It forces you to think in a language," says Gessler president Seth Levin. "If you're in a dungeon and you've got a troll coming after you, you don't have time to think of the correct word for *run* or *fight*. You've got to do it in your head immediately."

But what can a computer do that a human teacher can't? Levin believes that, "The beauty of the computer is that it's endlessly patient. If you have a problem with conjugating a verb, it will drill you forever."

Most Americans still have a "let the rest of the world learn English" attitude. But as the world gets smaller, we *need* to learn other languages. Our neighbors Canada and Mexico speak different languages. We can fly to Europe now in just three hours. "People are finally realizing that we can't survive in the world today without understanding another language," says Seth Levin.

Learning a nation's language is more than just a convenience. It also shows an appreciation for its culture. Sometimes we deceive ourselves into thinking the world revolves around the United States.

Gessler, most programs available for Apple II, Atari, Commodore 64/128, Commodore PET, IBM PC, Tandy 1000, TRS-80.

Other programs to look for: Linkworld Language Series (*Artworx*), for Apple II, Atari, Commodore 64/128, IBM PC; Russian for the VIC-20 (*Russian Software*), for Commodore VIC-20; *Le Français par Ordinateur* (DHC Educational Software), for Apple II. DHC also makes programs that help students with the names of French foods, customs in

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French-speaking countries, conversation about sports, and getting around the Paris subway system.

You might also want to check out Translator, from Polygon Industries. It translates texts in French, German, Spanish, English, and Italian. The manufacturer claims 90 percent accuracy. The program is made for most computers.

Learn How to Play Bridge

Contract bridge is one of the world's most popular card games, but many people—including this writer—find it totally incomprehensible. My father has accumulated enough points at bridge tournaments to qualify as a Life Master, but when he sat me down and showed me the rules of the game, it was like watching a foreign film without the subtitles.

If you're interested in learning the game, you may find *Charles Goren: Learning Bridge Made Easy* to be a good way to do it. Unlike a human teacher, this computer program will have infinite patience as you struggle to understand the rules of the game. It won't embarrass you in front of any bridge partners, and it will teach you the game at the pace you feel is most comfortable.

Goren has won every major bridge tournament, and his books have sold over ten million copies. One of them is included with the program and works in tandem with it. In Goren's system, you read the first two chapters ("Getting Started" and "Opening Moves in the Bidding") of the 144-page book, then test your skill with the "Hand Evaluation" section of the program. Then you study the following chapters before tackling the next part of the program, "Opening No-Trump Bids" and "Opening One of a Suit."

The program has been divided into two sections—"Bidding" and "The Play of the Hand." There are ten bidding quizzes which correspond to chapters in the book—Preemptive Opening Bids, Responding to One of a Suit, Rebids by Opener, and Direct Competitive Action, among others. In the Play section, the computer randomly generates bridge hands for you to practice—75 to test your declarer play and 25 for defense.

The teaching is interactive. When you make a correct decision, the program will encourage you. When you make a

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mistake, it will say either “Wrong Play—Try Again” or “There Is a Superior Play—Hit Return.” After two incorrect bids, you’ll get an explanation of the proper play.

Goren does his best to make bridge easy, and that’s saying a lot. At any time you can hit your question mark key (?) to get help. Making bids is fairly simple. To bid one diamond, for instance, you simply hit the 1 key and the D key. To play a card, you just press Return. The computer will automatically play the opponent’s hand. If tricks and trumps and jump overcalls and dummies are Greek to you, this program may be one of the most painless ways to learn the game.

CBS Interactive Learning, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Bridge (Artworx), for Apple II, Atari, Atari ST, Commodore 64/128, IBM PC, Macintosh; Tom Throop’s Bridge Baron (Great Game Products), for Apple II, Atari ST, Commodore 64/128, IBM PC, Macintosh; BridgePro (Computer Management Corp.), for Apple II, Atari, Commodore 64/128.

Learn How to Mix Drinks

If your computer is driving you to drink, you might as well do it the high-tech way—with Concept Development's *Mr. Boston Official Micro Bartender's Guide*. Based on the 50-year-old book *Mr. Boston Official Bartender's Guide* (62 editions, 10 million copies), this program can turn anybody into a semiprofessional mixologist.

Which drinks are most popular in the summertime? What's the recipe for a Bermuda highball? How much booze do I need to make 13 of them? Which drinks can I make if all I've got in the house are vodka and club soda? Let me see a list of all the gin cocktails that use lime juice. What does Barb's husband John like to drink?

These are just a few questions *Mr. Boston Official Micro Bartender's Guide* can answer for you in about a tenth of a second. The program contains over a thousand drink recipes with full mixing directions. In John's case, you would have typed his favorite drink into the program the first time he visited your house. After that, anytime John (or any of your friends) comes over, the computer spits out the appropriate recipes. You can be mixing his drink even before John rings your doorbell. With this "party planning feature," you can type in your entire guest list, and the computer prints out all the appropriate recipes, ingredients, and even the glassware you'll be needing.

Now let's say John brings along six friends who each want a vodka tonic. No problem. *Mr. Boston Official Micro Bartender's Guide* will instantly recalculate the recipe for the larger amount. The program makes it possible to "size" a recipe from one to 999 servings (in case John really gets carried away and brings a huge spur-of-the-moment party).

The program also contains an "electronic liquor dictionary" that tells all you need to know about popular liquors, liqueurs, and mixing techniques. A complete beer section is included, describing each variety in detail.

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Wine lovers should also check out *Micro Wine Companion*, also from Concept Developments. It will help you choose the right wine in an instant from thousands of brands and labels. If you're looking for a semidry white or a robust red, the computer will find one for you. For collectors, the program helps you keep track of every bottle's vintage, location, type, country, region, vendor, purchase date, price, sweetness, breathing time, current market value, year the wine is ready, and when it should be drunk.

Cheers.

Concept Development Associates, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: *Micro Barmate (Virtual Combinatics)*, for Apple II; *The Electronic Bartender (WTC Publishing)*, for Apple II, Commodore 64/128, IBM PC. Wine lovers should try *Hugh Johnson's Wine Cellar (Simon & Schuster)*, for Apple II, IBM PC. The disk manages your wine collection, helps you select the perfect wine for the perfect meal, and contains detailed information on 1000 recommended wines.

CHAPTER 4

The Debatable Sciences

Chart Your Horoscope

Astrology is the belief that your personality and psychology are influenced by the position of the stars and planets at the moment you took your first breath. Millions of people are true believers and consult their astrological charts regularly. Just about every newspaper in the United States carries a daily horoscope column (how many carry a computer column?).

Not bad for a subject that almost all scientists believe is a lot of nonsense.

Professional astrologers take their work seriously. They don't just ask your birthday, look up in the sky, and predict your future. A thorough "reading" requires hundreds of calculations involving geocentric longitude and latitude, right ascension and declination, altitude and azimuth, heliocentric longitude, and other scientific-sounding parameters.

In recent years, astrologers have turned to the computer to perform these calculations quickly. A company called Astro-labe makes astrological software exclusively. Here are a few of their programs:

Astro-Scope is a horoscope interpretation program. All you do is type in your birth date and the time of day you were born, and the time zone, latitude, and longitude of the place where you were born. A listing of the chart positions will appear on the screen, followed by a list of the planetary aspects. Press Return, and you'll see seven pages of text discussing your personality, psychological nature, and your strengths and weaknesses.

Contact Astro-Report is aimed at couples. It takes the charts of each person and makes a third chart from them—sort of like a baby. The first page is the familiar wheel-shaped astrological natal chart showing the 12 houses, or parts of the life, for the couple. Then comes a five or six-page analysis of what each of the pair needs in a relationship. This is based on the signs of the sun, moon, and ascendant, and a close reading of the planets of the fifth (romance), seventh (partnership), and eighth (sex) houses.

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The second part of the program uses “synastric techniques” to compare the two charts. For each partner, there’s a list showing how the other’s planets fall into his or her houses, and a three-page planet-by-planet interpretation. The program won’t tell you to get married or split up. It attempts to show the couple how to make the best of their strengths and overcome the potential problems in the relationship.

Sex-O-Scope is an astrological interpretation of your love life. This one isn’t for the kids. It zeroes in on a person’s sexual preferences, love-making styles, turn-ons, and hang-ups, and discusses them in a tongue-in-cheek, entertaining manner.

The company makes astrological software to analyze just about every time span in your life. *Life Astro-Report* interprets the positions of Jupiter, Saturn, Uranus, Neptune, and Pluto, so you can look at a decade or more of your life. *Yearly Astro-Report* follows the position of the sun, and *Monthly Astro-Report* follows the moon. There’s even a *Daily Astro-Report* and (for real obsessives) an *Hourly Astro-Report*.

Astrolabe claims that its programs track the stars and planets with an accuracy of plus or minus one minute of arc. So if you believe that the position of a planet millions of miles away has anything to do with a baby born on Earth, you know where to go.

Astrolabe, most programs available for Apple II, Commodore 64/128, CP/M, IBM PC, Macintosh, TRS-80.

Other programs to look for: Horoscopes (*Zephyr Services*), for Apple II, IBM PC; Fortune Teller (*Brown-Wagh Publishing*), for Apple II, Commodore 64/128, IBM PC, Tandy 1000.

Calculate Your Biorhythms

Around 1900, Dr. Hermann Swoboda at the University of Vienna noticed that his patients went through rhythmic changes in their emotional states. They'd have a period of "good" days, peaking on the seventh day of a cycle, and then a period of "bad" days, hitting their low points on the twenty-first day. Swoboda calculated that a complete emotional cycle lasted 28 days.

He also determined that we have a rhythm in our physical state, and this cycle lasts 23 days. A few years later, a professor named Alfred Teltscher discovered that his students went through 33-day cycles in their intellectual ability as well.

These studies gave birth to the theory of biorhythms—that every person's physical, emotional, and intellectual states vary in a continuous cyclical pattern. The minute you're born, these three biorhythm cycles begin operating.

Sound crazy? Many aspects of our lives go in cycles. We go to sleep and wake up as the sun goes down and comes up. Birds fly south at a certain time, and bears go into hibernation at regular cycles. The moon causes ocean tides to rise and fall twice every 24 hours.

The validity of biorhythms has been debated for years. Believers have pointed out some amazing coincidences—airline disasters occurring when pilots were going through their bad days, and athletes breaking records on their good days. Disbelievers, of course, put biorhythms in the same class as moon worship.

Whether you believe in them or not, it's fun to calculate biorhythms on your computer. *Biorhythm Status* is a killingly simple program to use. All you do is tell the computer your name, the date of your birth, and the current date. First, it will calculate the number of days you've been alive. A 30-year-old,

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for instance, will learn that he or she has been on this planet for 10,959 days.

The program then calculates your physical, emotional, and intellectual cycles. Because each cycle lasts a different number of days, they don't go up and down at the same time. On any particular day, your physical cycle could be on an up-swing, while your intellectual cycle could be at its worst. In fact, after the day you're born, the three cycles don't come together again until you're 58 years and 67 days old.

The program prints out a chart starting at 0 (the beginning of your cycle) and ending at 1.0 (the end of that cycle). The first half (0–0.50) represents your good days, and the second half (0.50–1.0) represents your bad days. On the day that I'm writing this, my physical cycle is at 0.78, my emotional cycle is at 0.79, and my intellectual cycle is at 0.94. In other words, I'm about to enter my best intellectual period, but I'm a physical and emotional wreck. So says the theory, anyway.

Because you can plug in any dates, it's possible to check your biorhythms for the past or future. See how your cycles were cycling on the day you got married. See if you should schedule that job interview next week. See if you should bother getting up tomorrow. Even if you think it's all a crock, the program is fun to run at a party.

Bill Ashby, who created *Biorhythm Status*, did it for the fun of it. "I'm not a real dyed-in-the-wool disciple of biorhythms. I just think they're kind of fascinating," he says. "It was a fun thing to program, because you've got to figure out how to handle leap years and things like that." Ashby and his wife, Shirley, manufacture and sell the program right out of their home. "She does the contact with the outside world; I stay here and play with the computer."

Ashby & Associates, for Apple II, Epson HX-20, IBM PC, Macintosh, Osborne, TRS-80.

Other programs to look for: Bio-Data (*Zephyr Services*), for Apple II, IBM PC.

Find Out If You've Got ESP

Has a long-lost girlfriend ever called on the phone just when you happened to be thinking about her? Have you had premonitions of tragedies or national events? Do you, and you alone, know exactly where Jimmy Hoffa is?

Maybe you have extrasensory perception. You can find out with Jack Houck's *Psychic* (?). This simple program uses the computer's random number generator to find out whether you have the ability to predict future events.

In its basic form, *Psychic* (?) tells the computer to produce either a 1 or a 2 on a random basis. Your task is to guess which of those numbers will turn up. After each turn, the screen will read either "HIT!!! CONGRATULATIONS" or "SORRY. TRY AGAIN." If you get somewhere near 50 percent correct, you're probably normal. You don't have ESP.

But if you guess significantly better or worse than 50 percent, there is the possibility that your mind somehow knew which numbers the random number generator was going to produce *before* it produced them. Or maybe (bring on the "Twilight Zone" music here) your mind influenced the random number generator. According to the program, you have to hit 99.7 percent accuracy before positive results can be called significant.

The program allows you to set the range of the numbers, and it presents a graph of your hit/miss ratio during the session. The graph can be printed out. A session can last anywhere from 1 to 100 tries. If you want to, you can pick a single number, put the computer on autopilot, and come back five minutes later to see what percentage you guessed correctly.

Psychic (?) isn't endorsed by any scientific groups, and the author doesn't claim that it should be taken very seriously (although he claims that top executives of big companies are

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good at it). But it is an entertaining diversion, and your friends may get a kick out of it. But if they start bending your spoons, keep them away from your computer.

Jack Houck, for Apple II.

Study Tarot Cards

Nobody knows if tarot cards came from Egypt, the ancient Mideast, or the Orient. What is known is that they are the oldest surviving playing cards in the world, and they're still being used today to tell fortunes and predict the future. Warlock Software's *Strange Brew: The Electronic Tarot* marries the ancient and the new by putting a tarot deck on the personal computer.

If you've never seen a deck of tarot cards, here's what it looks like: There are 78 cards, of which 56 are Minor Arcana and 22 are Major Arcana. There are four suits (wands, cups, swords, pentacles), ten numbered cards, four court cards, and a joker. The joker, or fool, represents Everyman on the path of life, which is Folly.

During a session, the deck is shuffled, and some of the cards are laid out in special patterns, or spreads. Each card has a meaning and the spread is interpreted according to the order in which the cards are dealt. For centuries, these interpretations have been used in making decisions, helping friends, and gaining insight into a believer's strengths, weaknesses, and motives.

According to Warlock Software, tarot is even more useful on the computer screen. Not only can a computer shuffle cards faster than a human, but it can also interpret them faster. *Strange Brew* provides immediate answers to simple questions, or a complete psychic analysis of any situation or problem. Questions like "Does she love me?" or "Do I need a shower?" are a snap when the cards do the talking.

The theory is that these randomly selected symbols serve to jolt the human mind into a different state of awareness. This jolt can trigger certain unconscious processes that have the power to foretell.

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Warlock's Assam Assad says, "Some might call it fortune telling, but it's really a philosophical system."

And some might call it something else.

Warlock Software, for Apple II.

Other programs to look for: Tarot for the Mac (*Hack & Slash Software*), for Macintosh.

Consult the *I Ching*

Three thousand years ago in China, the house of Shang fell and the mandate of Heaven passed to the Zhou dynasty. They knew the secret of the universe—Yin and Yang are at the root of all things, and they change into each other in order to give motion to the world. This concept was expressed in their oracle *I Ching*, the ancient Chinese book of wisdom.

That may sound off-the-wall to you, but Confucius used it as his guide to proper behavior in harmony with nature. The psychiatrist Carl Jung used it as an analytical tool. Through the ages the book of *I Ching* has been used for everything from telling fortunes to predicting the stock market.

Kerson Huang, a 58-year-old physics professor at M.I.T., has done his own translation of the *I Ching* and put it on a floppy disk. "Since I was a child I have been interested in the *I Ching*," says Huang. "It's a very obscure text, even in Chinese. I always wanted to do a translation into English." Huang used the findings of modern archeology and scholarship to help decipher the original meaning of words and phrases from the ancient Chinese text.

Huang used the capabilities of the computer to make the *I Ching* easier to use. The ancient book is made up of over 4000 text passages that provide all kinds of advice. In order to determine which passages should be consulted, the precomputer *I Ching* user tossed a group of three coins six times. The combination of heads and tails was translated into the two basic life forces: Yin and Yang. Each one refers to particular advice in *I Ching*.

"The computer can cast the coins for you by generating random numbers. It also stores the text and outputs it," according to Huang. When you use Huang's *I Ching*, pressing any key on your keyboard six times determines the exact instant the random number generator kicks in.

Consulting the *I Ching* isn't exactly like reading *The Wall Street Journal*. If you ask the program a simple question like,

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"Will I get this job?" it will very often come up with a response like, "A wild beast is seen during eclipse. Clang the cymbal and sing, lest harm befalls the old." Relating this answer to your question about future employment is, of course, left up to you.

Actually, *The Wall Street Journal* did an article on Huang and his program in June 1984. They asked this question of the program—"Does Oracle work?" The response was, "The dragon is sometimes leaping in the pool."

Hey, if you want your answers cut and dried, consult with Ann Landers and Dear Abby, not Yin and Yang.

Kerson Huang, for Apple II, IBM PC.

Other programs to look for: *The Complete I Ching* (H.U.M.A.N.S. Inc.), for Apple II; *The Book of Change: I Ching* (Software Country), for CP/M, IBM PC.

CHAPTER 5

Sports and Recreation

Keep Track of Your Bowling Average

Most sports generate lots of statistics. But in bowling, the act of throwing a ball down an alley is almost secondary to scores, points, handicaps, and rankings. In a typical 12-team bowling league, somebody usually has to spend between three and eight hours a week calculating an evening's worth of statistics by hand. There usually isn't a lot of competition for that job.

High-tech bowling? It had to happen. Bowling Computer System's *The League Secretary—Professional Edition* is an all-purpose program that keeps just about any record and statistic a bowling league will ever need. Instead of taking hours, the computer does all the calculations in seconds. The only thing a human bowler has to do is tell the computer who scored what.

The League Secretary—Professional Edition computes points, handicaps, and averages for teams and individuals. It handles forfeits, make-ups, split seasons, vacancies, absentees, and blind scores. A few minutes after you enter the scores, the computer will print out all the necessary records.

The League Standings Sheet shows how the teams are ranked. The Current Average List shows everyone's average in descending order, ascending order, or alphabetical order. The Bowler Annual Record gives the scores of all the games bowled and shows who scored the highest game over their average (for trophy purposes). Records can be printed for the current week or for the year to date. The program can handle the records of up to 300 bowlers, 99 roving substitutes, 48 teams with 10 bowlers per team, and a season of 48 weeks.

Obviously, *The League Secretary—Professional Edition* is primarily for serious bowling leagues. But as James Tasker of Bowling Computer Systems says, "All bowling leagues are serious bowling leagues."

Bowling Computer Systems, for Apple II, IBM PC, Macintosh.

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Other programs to look for: Bowling Buddy (Columbia Pacific Technologies), for Commodore 64/128, IBM PC; Alley Stats (Dynacomp), for Apple II, IBM PC; Bowler's Database (Dynacomp), for Atari.

Bowling Computer Systems also makes The League Finance Manager (which records the amounts each team pays every week) and The Locker Rent Controller (which records who's renting which locker and when payments are due).

Organize Your Team's Statistics

I think the greatest change is the way ball clubs trade players. The people you deal with are more upright now, because the technology has improved. We have our computers, they have theirs.

Billy Martin, in *The New York Times*

Suddenly, a few years back, major league baseball discovered computers. Managers parked PCs in their dugouts and used them to help make crucial decisions about pinch hitting, stealing, pitching out, or sending the pitcher to the showers. General managers used computers to help them decide which trades they should make. Players used them to prove that their statistics merited salary increases. Some teams even hired full-time computer experts. It's been said that the Texas Rangers fired manager Don Zimmer because a computer decided he was using his players incorrectly.

You don't have to be in the big leagues to use a computer. College teams, high school teams, little leagues, and even serious intramural leagues can now computerize their statistical records—or you can keep records of your favorite pro team for the fun of it. Just about every sport involves a lot of bookkeeping. A computer can take over a lot of the numerical drudgery, so you don't need to have a *mind* like a computer.

Baseball Statistics and *Basketball Statistics*, both by Educational Activities, are computerized sports spreadsheets that help coaches keep track of their team's vital numbers. The baseball program keeps cumulative totals and per-game averages for as many as eight teams of up to 25 players. For your pitchers, the program tracks games won and lost, innings pitched, runs scored, ERAs, complete games, wild pitches, balks, and eight other categories. For your hitters, it tracks at-bats, hits, sacrifice flies, RBIs, runs scored, stolen bases, times

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caught stealing, and more. The program also has space for entering inning-by-inning scores, runners left on base, extra inning games, and one-run games. All these stats can be entered in just a few minutes after each game and printed out for future reference.

The basketball program is similar. There's room for 12 teams of up to 18 players each. For each player, you can track field goal percentage, free throw percentage, offensive and defensive rebounds, fouls, minutes played, assists, turnovers, blocked shots, steals, and other statistics. The computer will also track points allowed and the rebound margin for the whole team. Players can be added or deleted at any time, and you can view any player's stats individually.

Computerized sports statistics is a growing field, and statisticians are becoming sports superstars in their own right. Sabermetrician ("baseball scientist") Bill James discovered the "birthday effect" a few seasons ago—hitters bat 50 points over their regular batting average when they play on their birthdays. Pete Palmer, the statistical consultant to the American League, found that batters with a 3–1 count hit for an average of .320, while batters with an 0–2 count hit .190. Information like this may help a manager play the percentages correctly in a crucial situation.

Then, if the strategy fails, the manager can march into the team owner's office and say, "Hey, it's not my fault—the computer told me to do it."

Educational Activities, for Apple II, TRS-80.

Other sports statistics programs to look for: Diamond (*Consistent Software*), for Apple II; Wrestling Statistics (*MECC*), for Apple II; Basketball Statistics (*MECC*), for Apple II; Gymnastics (*Midwest Software*), for Apple II, Commodore 64/128; Volleyball Stats (*Midwest Software*), for Apple II, Commodore 64/128; Track and Field (*Dynacomp*), for Apple II; Baseball Team Statistician (*Sequoia Compu-Athletics*), for Apple II; The Baseball Database (*Jacobsen Software Designs*), for Apple II, Commodore 64/128.

Keep Track of Your Golf Game

Dynacomp's *Golf Handicapper* will maintain the complete scoring information on up to 149 members of a golf club. The computer stores each member's name, 20 most recent scores, rounds played, best score, differentials for each score, stroke control instructions, and the player's handicap.

The handicap is calculated on the best 1 of 5 to the best 10 to 20. As scores are added beyond the twentieth, the oldest scores are dropped. You can print out handicap sheets.

Dynacomp also makes *Golfer's Database*. This is more of a personal golfing program. You can keep track of your scores, the number of putts you made, the number of greens you hit, courses played, course ratings, and even weather conditions.

Now that computers are infiltrating the golf course, it's getting harder and harder to fudge.

Dynacomp, for Atari, Commodore 64/128.

Other programs to look for: *Handicapper (Golfsoft)*, for Apple II; *Golf Handicapper (John B. Carson Jr.)*, for Timex-Sinclair.

Programs for Camera Buffs

Camera Simulator is one of the more clever computer programs you'll come across. As the name suggests, it simulates the action of taking a picture and teaches the fundamentals of photography at the same time.

As an example, the computer generates an animated image of a skier tumbling down a slope. Mountains, trees, and the sky are in the distance. First, you've got to focus the "camera." Alternately hitting the F and G keys causes the image to slide in and out of focus. You manipulate the keys until the image is sharp. Then you select a shutter speed with the arrow keys (from one second to 1/1000 second). Next, you pick one of several lens openings to adjust the exposure. When everything looks perfect, you hit the S key to snap the picture.

The computer "develops" the shot in a few seconds. The screen then becomes your finished photograph. If you have set everything correctly, it looks good. If you haven't focused properly, the skier is a blur on the screen. The same is true if you have selected a shutter speed that's too slow to freeze a moving object. If your lens opening is too wide, the image looks washed out.

Whichever mistake you make, the computer gently informs you that you have done something wrong and suggests how you should correct it—"YOU DIDN'T FOCUS PROPERLY. TRY AGAIN." By seeing your mistakes instantly, you can understand how shutter speed and f/stops interact in photography. The computer has acted as your teacher, camera, film, and processing lab.

Camera Simulator includes brief lessons on range finders, shutters, apertures, exposures, light meters, and trouble shooting, as well as a short history of photography. It was created by Armand Ensanian, a photography teacher for 18 years.

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Brain Builders, for Apple II, Commodore 64/128, IBM PC.

Camera Simulator is strictly for beginners, but even serious hobbyists and professional photographers are starting to use computers in their work. The computer can be a secretary that sends out mailings to clients. It can keep track of thousands of slides, prints, and negatives. It can log on to Photonet, an online information network exclusively for photographers.

DarkStar Plus will even assist you in the darkroom. If you want to make an 8 × 10 print from a 35mm negative, for example, *DarkStar* will tell you exactly how many seconds the negative should be exposed under the enlarger. You don't have to waste time and expensive materials making test strips. The program also calculates processing times and lens openings, and tells you which filters you'll need for a color print.

F/22 Press, for Apple II, Atari, Commodore 64/128, IBM PC.

Photographers interested in computerizing should also consult *The Photographer's Computer Handbook*, written by B. Natine Orabona and published by Writer's Digest Books.

Learn Morse Code/ Be a Ham

Dot dot—dot dash dot dot dash dash dash dot dot dot dash dot—dash dot
dot dot dash dot dot dash—dot dash dash dot dash dot dash dot dot dot
dash dot dot dot dash dash dot dash dot dot.

To decipher that message, you may have to spend some time with *Morse Coach*, from Microlog.

Outside the military, Morse code isn't used much these days. But if you and a friend would like to share a few secrets, it's the perfect way to tap, whistle, buzz, or flash messages to each other. There's nothing secret about Morse code, but very few people understand it. *Morse Coach* requires no previous knowledge of Morse code or computers.

The program is divided into three parts: Alphabet, Practice, and Speed Test. The Alphabet section teaches you the individual letters and numbers. The computer starts by beeping four characters (Q, 7, Z, G) and instructs you to hit the appropriate keys on the keyboard. When you get the hang of those four, new letters and numbers are automatically introduced.

The designers of *Morse Coach* believe that you should learn each character being beeped at a relatively quick rate. This way, you learn the "sound" of the whole letter rather than attempting to count individual dots and dashes. You can set the computer to send the letters anywhere from 10 to 99 words per minute.

In the Practice and Speed Test parts of the program, the computer evaluates how well you've learned the code. It sends out groups of five characters and records your responses. By correlating what you've typed with the actual signal, it figures how well you interpreted the message. The computer constantly keeps track of any errors and analyzes your mistakes so that you know which letters or numbers are causing you problems. If, for example, you type an *H* every time you hear an *S*, you'll find that out. You can check your progress on a bar chart at any time.

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Like any new language, Morse code sounds like gibberish at first. But the computer is a good teacher and doesn't feed you new material until you're ready for it. *Morse Coach* is one of the few programs that come on cartridge, so it doesn't require a disk drive.

Another cartridge made by Microlog is *Short Wave Listener*, which turns your computer into a listening post for those indecipherable beeps, squeals, and other mysterious-sounding signals you've heard on your shortwave radio. SWL makes it possible to connect a shortwave radio to the computer and watch text readouts from weather stations, news services, ships, and ham radio operators all over the world. It's a very inexpensive way to get involved with this interesting aspect of radio communications.

Microlog, for Commodore 64/128.

Concoct Your Own Science Experiments

It's 95 degrees out and you want to serve ice-cold drinks to a bunch of friends who will be arriving at your house in ten minutes. When should you drop the ice in the drinks in order for them to reach their coldest possible temperature when your guests arrive?

This is the type of experiment you could carry out with Hayden's *Temperature Lab*, a combination of hardware and software that turns a personal computer into a scientific workstation.

Temperature Lab includes an interface box, a cartridge, a temperature sensor, and a 145-page manual with instructions on how to perform many experiments. You can do experiments on evaporation, weather, and energy transfer, and you can even test out Newton's Law of Cooling. For the problem described above, you can stick the temperature sensor into glasses of ice water at varying intervals. The temperature readings will appear on a large thermometer on your screen. The computer will also make a running graph of the changing temperature, which can then be saved on a disk and printed out on paper.

Temperature Lab was developed by Dickinson College for students from age 9 to 18. Hayden also makes *Light Lab*, which includes a light sensor and can perform experiments on light absorption, scattering, emission, and color.

Hayden Books, for Apple II, Commodore 64/128.

Performing experiments on a computer can allow students to test hypotheses that can't be carried out in the real world. For example, we all learned about genetics and heredity in high school biology class, but we didn't get to carry out many experiments. It's not so easy to breed seven generations of cats

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to show a class what color eyes they'll all have. But with Conduit's *Catlab* simulation, you can do the whole thing during one classroom period. Students can get a better understanding of the field when they can carry out complicated heredity experiments on the computer.

Computerized experiments will never replace beakers and Bunsen burners, but they can add an interesting new element to the study of science.

Conduit, for Apple II.

Other programs to look for: Science Toolkit (*Brøderbund*), for Apple II; The Incredible Laboratory (*Sunburst*), for Apple II, Atari; Biobits Series (*Compress*), for Apple II; Heredity Dog (*HRM Software*), for Apple II, Commodore 64/128; Laboratory Simulations Series (*Merlan Scientific*), for Commodore 64/128.

Learn How to Hit a Curve Ball

The National Pastime has been represented in plenty of computer programs, but usually they involve ridiculous-looking half-inch stick figures running around the screen like bugs. *Dave Winfield's Batter Up!* isn't a game. It's a hitting tutorial, taught by a guy who hit .340 with 193 hits a couple of seasons back.

It's a three-part program. The first part is *Dave Winfield's Batter Up!*, the software lesson. Winfield goes through all the fundamentals of hitting—the grip, the stance, the pitch, the swing, and his personal hitting strategy. Using examples with great pitchers like Nolan Ryan and Bob Gibson, the program demonstrates how to adjust the height of your swing and length of your stride for any situation. The action can be slowed down or even presented “frame by frame” so that you can see exactly what's going on.

The second part is *Slugfest!*, where you step into the batting cage and hit for as long as you'd like. You get to select the starting pitcher, the league, and the ballpark.

The last part of the program is actually a 55-page book—*Batter Up! The Act of Hitting*. This is Winfield's hitting philosophy as well as his personal advice on physical fitness, the psychology of winning, and improving your body control.

The act of swinging a baseball bat is pretty far removed from pressing a key on a computer keyboard or manipulating a joystick. *Dave Winfield's Batter Up!* is fun, but it's debatable whether or not it can actually make you a better hitter (especially when there are excellent videotapes on the same subject). Winfield's advice is solid, but computer graphics have yet to reach the point where they can simulate a 95-mile-per-hour slider breaking over the outside corner. When interactive video discs come on the scene in a few years, Winfield might take another crack at it.

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**Avant-Garde, for Apple II, Commodore 64/128,
IBM PC.**

Avant-Garde makes a couple of other sports lessons you might be interested in: *Joe Theismann's Pro Football* and *Chris Evert Lloyd Tennis*, both for Apple II, Commodore 64/128, and IBM PC.

Build Your Own Robot

At Bell Labs in New Jersey, they're spending millions to teach robots how to catch Ping-Pong balls. Catching a Ping-Pong ball is easy with human hand/eye coordination, but a robot needs two television cameras, a vision microprocessor to calculate the trajectory of the ball, and motors to quickly move the arm into position and catch the ball in a cup. Someday—*maybe*—we'll figure out how to teach the robots to throw the balls *back*.

If computing is an infant industry, robotics is in the fetal stage. A lot of people think that robotics now is where personal computers were ten years ago, when people like Steve Wozniak were building them in their garages. Robotics, say the experts, is "the next big thing."

Multibotics is a home robotic workshop that hooks up with your computer. It may turn out to be the erector set for kids of the eighties.

The heart of the system is the B100 Interface Module, which plugs into your computer. Cables are used to connect lights, motors, sensors, and other external devices. Instead of just crunching numbers, your computer can be turned into a variable-speed motor controller, voltmeter, oscilloscope, infrared detector, and audio digitizer. *Multibotics* connects your dumb terminal to mechanical and electrical devices in the real world.

The system is flexible. You can do one of the 50 projects and experiments described in the instructions, or design and build your own inventions. The first project is easy. You simply attach a small motor to the computer and program it to go forward, reverse, and at different speeds. Then you progress through Motors and Gears, Generators and Feedback, Digital Electronics, Moving Vehicles, and Electronic Speech. Not all the projects are robotic in nature, but you *can* build your own computer-controlled robots, cars, and cranes.

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Adults will enjoy it, but the system has been designed so that even a ten-year-old child can perform the sample projects without help. No tools are necessary for assembly; the parts snap together. It's probably best not to tell your kids that *Multibotics* is an educational system that demonstrates the basic science and engineering principles they see every day.

Multibotics, for Apple II, Commodore 64/128, Amiga, Atari, Atari ST, IBM PC.

Other programs to look for: Robotic Computing Kit (*fischertechnik*), for Apple II, Commodore 64/128.

Design a Patchwork Quilt

The sewing machine was the first “universally accepted labor-saving device for the home,” according to *The Book of Firsts*. It made it possible for someone to sew a garment in a tenth of the time it had taken by hand. Similarly, the computer is a labor-saving device that helps us complete many tasks more quickly than we could ever have done before. And like the sewing machine, the computer is revolutionizing the textile field. Weavers are starting to create their designs on the screen.

Dorothy and George Zopf’s *Patchworks* is a quilter’s computerized workshop. A quilt is actually a fabric sandwich. It’s made of three layers of material, with the top layer a colorful pattern. A patchwork quilt is made by stitching together many small pieces of cloth.

Patchworks is a graphics program. The computer, for example, can take part of a design and “stamp” it all over the screen as many times as you like. You can create an infinite number of patterns by laying down blocks, then multiplying them, rotating them, inverting them, cycling them through shades of color, or making mirror images.

The computer eliminates repetitive drudgery, so the quilter can concentrate on creating beautiful designs. Quilters used to spend long hours arranging and rearranging the tiny pieces of cloth by hand. Now they can easily experiment with endless possibilities by moving pieces around the screen. After the basic pattern is decided, dozens of variations can be created at the touch of a key.

Another problem with traditional quilt design is that you have to complete the entire design before you get an idea of what the finished product will look like. Quilters may spend days or even weeks working on designs, and then decide they don’t look good after all. With the computer, they can edit a bad idea into something more pleasing in seconds.

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Patchworks is also a quilt calculator. You can specify the size of your quilt, and the computer will instantly calculate the amount of fabric and the number of each type of patch that will be needed.

When your *Patchworks* design is perfect, just print it out and use it as your blueprint for stitching your quilt. Or your needlepoint, stained glass, mosaic tile, glass etching, or tapestry. *Patchworks* can be used for anything that requires a pattern.

Random House, for Apple II.

Other programs to look for: The Handweavers' Input Program (*Herbi Gray Handweaving*), for Commodore 64/128; Stitch Grapher (*Compucrafts*), for Apple II.

Create Your Own Crossword Puzzles

At some point in our lives, almost all of us have killed a few hours doing a crossword puzzle. But only a few of us ever *created* a crossword puzzle from scratch. Designing the grid and making all those words fit together perfectly just seems a pain in the neck, so why bother?

The computer may change all that. With *Crossword Magic*, you just provide the words and clues. The computer does the dirty work.

First, you're asked you if you want to use the "automatic puzzle sizing option." This means that you pick your words freely, and the computer makes the grid larger to accommodate them. If you prefer, you can pick the size of your puzzle in advance, anywhere from 3 to 20 boxes square.

Then you just type a word that you want in your puzzle. *Crossword Magic* automatically enters it into the grid. The first word always appears in the top row across. You can move it to a different location or delete it if you change your mind. When you enter your next word, the computer will show you all the spaces where it can fit. If the word doesn't connect with anything on the screen, you'll hear a buzz and see, "Word does not fit yet." The word will be stored in an "Unused Word File." When a spot opens up, the computer will reintroduce it. You can save as many as 500 words in the Unused Word File.

At the same time you're entering words, you're also writing clues for them. The computer organizes the clue list for you. When you print out the puzzle, it will also print out the clues and an answer code.

Crossword Magic not only makes it easier to write a puzzle, but it also makes it easier to *play* one. Unlike the first-come, first-served puzzles in your daily paper, computer crossword puzzles give each member of the family a chance to

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work the same puzzle. And you can store up to 20 puzzles on a single disk.

The only real disadvantage is that *Crossword Magic* doesn't allow you to create wild, imaginatively shaped puzzles. The program works only with square boxes. But you can create respectable-looking crossword puzzles simply for the fun of it or as a way to expand your vocabulary. The program can also make creative crossword greeting cards, announcements, or invitations. Whatever you do, you'll get your point across.

Or down.

Mindscape, for Apple II, Atari, Commodore 64/128, IBM PC.

Other programs to look for: The New York Times Computer Crossword Puzzles (*Simon & Schuster*), for Apple II, Atari, Commodore 64/128, IBM PC; MasterPieces (*Hayden Software*), for Macintosh; Puzzle Master (*Shenandoah Software*), for TRS-80; Crosscheck (*Datasoft*), for Apple II, Atari, Commodore 64/128, IBM PC. You can solve any cryptogram with *Crypto* (*Piedmont Specialty Software*), for IBM PC.

Play a Game of Chess by Yourself

For a long time, scientists have dreamed of creating a machine that could play chess. In the 1820s, Baron Wolfgang von Kempelen's Chess Automaton thrilled crowds by beating almost all human opponents—until it was revealed that its box of gears and wheels also contained a Polish army officer who happened to be a chess expert.

When computers were developed, it was no longer necessary to hide a human being in a box. The computer, by completing zillions of calculations in a few seconds, can evaluate hundreds of chess moves and select a good one for any position.

The first computer chess programs started appearing shortly after the first computers (probably because "computer nerds" and "chess nerds" were often one and the same). Much of the early work on artificial intelligence concerned developing computer programs that could play chess. In 1966, a skeptical scientist named Hubert Dreyfus claimed that any ten-year-old boy could beat a certain computer chess program. Dreyfus was promptly beaten by the program himself.

A more recent chess playing superstar was *Belle* (developed at Bell Labs), a mainframe computer program that could examine 30 million possible positions in three minutes. *Belle* achieved a rating of 2200 points and could beat 99 percent of all human opponents (a world champ rates about 2700).

In the last few years, chess programs have started coming out for personal computers. The biggest seller is Hayden Software's now-classic *Sargon III*. Just for starters, *Sargon* will play chess with you. It can play at nine different skill levels, taking between five seconds and ten minutes to "make up its mind" for each move. (For its opening alone, *Sargon* has to choose among 68,000 possible moves.) You can probably beat it at level 1. It will probably humiliate you at level 9.

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But the power of this program is that it does so much more than just play good chess. It displays all the moves in standard chess notation. You can save the game on a disk or print out the screen on your printer (in case you want to ponder your position overnight). If you really get stuck, you can simply instruct *Sargon* to switch sides with you at any time and let it get out of the mess you got into.

Probably the best part about *Sargon III* is its chess tutorial. Stored on the program disk is a collection of the 107 greatest chess games ever played, dating back to 1851. Each game is played out, move by move, on the screen for you. Every time you hit the Return key, a player moves. Students of chess can analyze each position and choose a move, then see what the real grand master did. The disk also contains 45 classic chess problems for you to work out on your own.

Chess is also one of those few computer games that are really socially acceptable to play. The same amount of brain activity may go into *Pac-Man* and *Sargon*, but *Sargon* just seems so intellectual.

Hayden Software, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: Bluebrush Chess (*Bluebrush*), for IBM PC; Cyberchess (*Cyber Enterprises*) for Commodore 64/128, TRS-80; Chessmaster 2000 (*Electronic Arts*), for Amiga, Apple II, Atari, Atari ST, Commodore 64/128, IBM PC, Macintosh; How About a Nice Game of Chess! (*Odesta Corporation*) for Apple II, Commodore 64/128; Mychess II (*Datamost*), for Atari, Commodore 64/128.

Computerize Your
Coin Collection,
Stamp Collection, or
Any Other Hobby

People who collect things have a problem—how do you keep track of all the stuff you’ve stashed in file cabinets, cardboard boxes, or who knows where?

Notebooks and index cards can do the job, unless of course you can't keep track of where *they* are either. A computer can be an excellent record keeper. It will effortlessly store huge quantities of information, organize it, and display it or print it out for you. That way, the next time you need to find something, you won't have to turn your house upside down looking for the scrap of paper with the right information on it. Just hit a few keys and the answer will appear on the screen. Putting your hobby on disk can take much of the drudgery out of record keeping and give you more time to enjoy your hobby.

One such disk is *COINS* (COMputerized Inventory of Numismatic Stock) from Compu-Quote. With this program, you enter your coin collection into the computer, which instantly determines its total value. The disk's Standard Coin file describes 1600 common United States coins dating back to 1839, along with the latest market value for most grades. You can also keep track of your yearly purchases and sales, what you paid for each coin, when you bought it, and from whom. Update disks are released every year, so your records will be current.

Compu-Quote also adds a new dimension to a collector's philatelic enjoyment with its simply titled *STAMPS*. Similar to *COINS*, *STAMPS* provides the values of more than 2500 United States stamps in nine grades. You just tell the com-

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puter what type of stamp you've got, and it tells you the denomination, year, and description. Then you type in the number you own of that stamp and the condition, and the computer determines the total value. *STAMPS* also calculates your percentage of profit when you sell a stamp, and it stores your "want list" of future purchases.

If you have a hobby like collecting Cracker Jack prizes or breeding cockroaches, you may have to use a general file management program to keep track of your inventory. But for people with more traditional hobbies, there's usually a software program geared just for you. These programs are primarily for serious collectors. If you own a few coins, stamps, or cockroaches your grandfather gave you, it would be pretty ridiculous to waste your time putting them on disks.

Compu-Quote, for Apple II, IBM PC, TRS-80.

Other programs to look for: *Coindata and Stampdata (Dynacomp)*, for Apple II, IBM PC; *Record Collection Manager (McGraw-Hill)*, for Apple II, IBM PC, TRS-80; *Audio/Video Catalogue (Batteries Included)*, for Commodore 64; *Magazine Catalog (RMH Software)*, for Apple II.



CHAPTER 6



Simulations

Design Your Own Pinball Machine

“Pinball is dead!” That’s what everyone said when the video-game phenomenon took over the world in the early 1980s. But Bill Budge almost single-handedly resurrected pinball when he created *Pinball Construction Set*, the first commercially successful simulation and the program that really launched the field.

The PCS program comes with five ready-made pinball games, but the real fun comes from creating games of your own. The screen is laid out with a “parts box” on the right half of the screen and an empty pinball table on the left. The parts box contains flippers, bumpers, drop targets, slingshots, kickers, and other essential elements of pinball. There are even magnets and invisible ball-eaters, which you won’t see in real-life pinball. It’s possible to create a game with as many as 128 parts. The parts are moved back and forth across the screen with a picture of a hand, which you manipulate with a joystick.

You have complete control over your creation. You can change the point values of the targets you’ve placed around the screen, and you can change the musical sounds that targets make when they’re hit. You can change the physics of real life—gravity can be doubled or halved, the speed of the ball can be altered, and you can even vary the strength of the flippers and elasticity of the bumpers. You can see what it would be like to play pinball on the moon, if you’d like.

When you’ve finished constructing your machine, PCS turns into a graphics program and lets you “paint” it with five colors. You can put your name or the name of the game on the back glass. For real precision work, parts of the field can be magnified seven times.

When you’re satisfied with your creation, play the game. The flippers will flip, the kickers will kick. If you’ve made a mistake and the balls keep getting stuck on one part of the

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screen, it's simple to go back to the parts box and make a slight alteration in your design. Or you can change the gravity and speed of the balls, if you'd like. If the game is truly a masterpiece the world should know about, you can save it on a disk. If it's a dog that isn't any fun to play, you can just drag the whole mess off the screen and start over. *Pinball Construction Set* can make you a pinball wizard, even if you never play a single game.

Electronic Arts, for Apple II, Atari, Commodore 64/128, IBM PC, Macintosh.

Design Just About Anything

The success of *Pinball Construction Set* has spawned an entirely new type of software—the electronic erector set. These are not quite games, and they’re not exactly simulations either. They give the user—generally a young person—a set of tools and allow him or her to use them in an imaginative, nonstructured manner. With one of the dozens of construction sets on the market, a child can engage in noncompetitive play and build just about anything.

Barbie (Epyx) puts the 200-million-selling doll on the computer screen for the first time. Instead of buying hundreds of dollars’ worth of Barbie accessories, a child can get them all in one program. Barbie can drive her Barbie-car through a town filled with stores and take her pick of dozens of outfits to mix and match. If you’d like, you can change Barbie’s hair-style or even her hair color, and then go for a picnic with her boyfriend of the last 25 years—the ageless Ken.

Another construction set is *Dream House* (CBS Interactive Learning)—sort of a dollhouse construction set. The child is given four models—a colonial farmhouse, a San Francisco Victorian house, a Manhattan penthouse, and a hideaway cottage. As you move from room to room (bird’s-eye or cutaway view), you can become an amateur interior designer. Floor plans can be examined, various objects can be placed around the rooms, and wallpaper can be painted in different colors. You can choose from several light fixtures that turn on and off, and you can landscape the house’s exterior. Some objects, such as the goldfish bowl and the TV set, are even animated. (See also “Design Your Own House.”)

There are plenty of other construction sets. *Mail Order Monsters* (Electronic Arts) provides a catalog of body parts (wings, gills, fangs, tentacles, and so forth), weapons (lasers, psionic amplifiers), and defenses so that you can dream up

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custom-made creatures. *Racing Destruction Set* (Electronic Arts) lets you create an automobile race track. Children can place icy patches, big jumps, mines, or oil slicks anywhere on the track and even manipulate gravity. Then they can select from nine vehicles (stock cars, motorcycles, lunar excursion modules, and so on) and have a race on their own track. There's also a *Hot Wheels* program (Epyx) and a *G.I. Joe* program (Epyx). Most of the software mentioned here is available for the Apple II, Commodore 64/128, and IBM PC.

Construction sets are the electronic "colorforms" of the eighties. They give us the power to build things and play with an infinite number of shapes on the computer screen, without our having to learn complicated computer programming. It probably won't be long before somebody comes up with a *Construction Set Construction Set*.

Dissect a Frog

Remember high school biology? Remember when you got grossed out dissecting that poor frog? Remember when your friends took pieces of the frog and put them in your lunch when you weren't looking? All that fun with frogs may be gone forever with the release of one of the more outrageous programs out there—*Operation: Frog*. It's a simulation of the dissection of an American bullfrog.

OpFrog doesn't let you just hack your frog to pieces and stand back to admire your handiwork. You've got to follow the rules of a traditional dissection. Four onscreen tools are provided—scissors, probe, forceps, and magnifying glass. To examine any organ, you must first probe it, snip it, drag it over to the examination tray, and hold the magnifying glass over it. As with a real frog, the organs are arranged in three levels. The heart, liver, spleen, and 22 other organs must be removed in a particular order.

After you place an organ on the tray, you can look in the "Frog File." A close-up graphic of the organ appears, along with text explaining how it works. With the heart, you even get an animation showing how it beats. Fortunately, you're spared from seeing an animation of the digestive system, which would probably turn a lot of stomachs.

The computer gives you the power to do something no scientist can do—bring a subject back to life. After you take out the frog's innards, you can put it back together again. Simply drag the body parts back to their correct places in the opposite order of removal. When Froggy is back in one piece, it gleefully leaps off the table and does a little dance with a top hat and cane. You can recycle it and dissect it again another day.

OpFrog doesn't *exactly* duplicate a real frog dissection. There are just too many body parts to display on the screen. The program shows the main organs, one muscle, and no

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bones at all. But boneless frogs are better than none at all, right? And not nearly as crunchy.

Scholastic, for Apple II, Commodore 64/128.

Other programs to look for: VisiFrog (*Ventura Educational Systems*), for Apple II.

Run for President of the United States

It's election night. The polls have closed. Your blood is pumping. It's been a long campaign, from those town meetings in New Hampshire to the last-minute campaign stops in California. You've given hundreds of speeches and kissed hundreds of babies. Now it's all over and you can only wait. Will the American people reward you with the presidency, or turn you into next year's Trivial Pursuit question?

The 1984 election inspired *President Elect*, a program that lets you see what it's like to be in the middle of the no-holds-barred, bare-knuckle world of a political campaign. It's also an excellent way to learn the American political system.

President Elect lets you change history by inventing your own candidates, or you can match up the real-life candidates who ran between 1960 and 1984. Each week of the eight-week campaign, you'll have to make important decisions: how many campaign stops to make in a state, whether or not you should debate the other candidates, how your money should be spent. Weekly polls give you an idea of how you're doing and which states are leaning in which directions. You can play out election night in realtime (about four hours), or just push a button and see who won. As many as three candidates can run at the same time.

One of the most intriguing things about *President Elect* is that you can monkey around with the lives of real candidates and see what happens. For example, in the actual 1980 election, Ronald Reagan beat Jimmy Carter by a landslide. But if you make Carter more liberal, a better speaker, and take away his incumbency, he beats *Reagan* by a landslide.

It used to be that a political machine was a bunch of cigar-chomping guys yelling at each other in a smoke-filled room. Today, a political machine may be sitting on your desk.

Strategic Simulations, for Apple II, Commodore 64/128.

Play the Stock Market

In the real world, only a few of us have the cash and the guts to risk the big bucks on the stock market. But in the world of computer simulations, anyone can become a millionaire tycoon or lose his shirt in a couple of hours at the keyboard. *Millionaire* is such a wicked duplication of the real thing that high schools and colleges use it to show students what Wall Street is really like.

When you begin the program, 14 weeks of the 91-week session have already passed, and trends are developing. There are 15 actual stocks on the board, including some big ones like IBM, Sears, K mart, and General Motors. You've got \$10,000, and you can buy any stocks you like. As in the real world, many factors influence the stock market. Every week you'll receive news of congressional legislation, labor strikes, financial reports, or even the weather. The news headlines have been taken from real newspaper stories.

The key to success in the market lies in correctly interpreting the signs. If you hear that insiders are trading K mart stock heavily, it could mean that the stock is about to split and go up. On the other hand, it may indicate that the insiders are dumping their stock in anticipation of it falling. Each week some of the stocks will go up and others will go down. Fortunes will be made and lost, and the trick is to spot the trends.

Millionaire will give you plenty of data on which to base your judgments. After any news bulletins, the computer displays all the daily stock quotes, including the high and low for the day, the closing price, and the change in value. The total market gain or loss is also shown. With a couple of keystrokes, you can see your stock portfolio, your net worth, graphs of any particular stock or industry, corporate histories, loans, and other vital information.

Making that first million is going to be hard work. With just \$10,000 at the start, you're a novice and can only buy stock. When you reach \$12,000, you can start borrowing

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against your assets and buy stock on margin. At \$18,000, you can use put and call options like professional investors and start making (or losing) some *real* money.

It takes nearly two hours to go through 91 weeks, and you won't become a millionaire in just one session. And as in the real market, you don't keep every cent you make. Your stockbroker gets 1.5 percent of each transaction, and Uncle Sam collects a 30 percent tax on your profits. The computer automatically deducts the fees and taxes, and it does all your bookkeeping for you. Despite the fact that *Millionaire* has no colors, graphics, or dancing animated characters, it can be an intense nail-biting fantasy for people who would like to feel the power of making decisions involving thousands of dollars at a time.

Blue Chip Software, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: Wizard of Wall Street (*Brøderbund*), for IBM PC.

Many people are using their computers to manage their *real* stock portfolios. I haven't discussed that application in this book for one reason—it's so conventional that it doesn't really qualify as unusual software. However, if you are interested in using your computer to manage your stocks, I have two suggestions: *Stockpak-II* (Standard & Poor's), for Apple II, IBM PC, and *The Isgur Portfolio System* (Batteries Included), for Amiga, Atari ST, IBM PC, Macintosh. You might also check out Dow Jones News/Retrieval, an online information network.

Be a Lawyer

A mugging occurred at 84th Avenue and 85th Street on September 13, 1982. The time of the incident was 4:48 p.m. Purse with \$3,000 in jewelry missing. A suspect has been arraigned. He pleads not guilty to the charges. Do you wish to prosecute this case?

Of course you do. This is one of the dozens of case descriptions in Navik Software's *Jury Trial II*—a wickedly realistic simulation of the American judicial system. If you take the case, you can be either the prosecutor or the defense attorney.

First, you'll gather some evidence by having a chat with the good ol' boy redneck sheriff. You can ask him about the suspect's appearance, the car he was driving, or any weapons that were confiscated. The sheriff doesn't necessarily tell you everything he knows. In fact, getting the real facts is like pulling teeth. You've got to ask the right questions to get all the clues and details of the crime.

Next, you select the six-person jury. There are 12 potential jurors, and this is one oddball bunch. You've got Esmirelda Eubank, who would probably acquit Hitler, and Brutus Hawgg, who sounds like he'd advocate the death penalty for jaywalkers. (Hawgg, we are told, has two Dobermans guarding his liquor store at night. It's been robbed three times. The first two times the suspects were released. The third time Hawgg just shot the burglar on sight.) There's also a stuffy aristocrat, a brainless bimbo, and some other stereotyped characters. As the lawyer, you can dismiss only two of the potential jurors. Naturally, you'll try to pick the jurors who are most likely to rule in your favor.

Then the questioning begins. Five questions are asked of each witness, and you play the witnesses. If you were careful when you were interviewing the sheriff, you'll know the answer to a question like, "What color was the getaway car?" If your answers match the evidence provided by the sheriff,

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you'll have a solid case. The computer acts as the judge. If you're the prosecutor, for instance, each correct answer you give will be a point in favor of getting a conviction. Mr. Hawgg doesn't require many conviction points before deciding to vote guilty. Ms. Eubank, on the other hand, won't vote guilty until you pile on the conviction points.

After all the witnesses have been questioned, the jury decides whether the accused will go free or get thrown in the slammer. You can even get a hung jury. It's just like being a real lawyer except that you don't make as much money. Case dismissed.

Navik Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Crime and Punishment (Imagic), for Apple II, IBM PC.

Fly Your Own Airplane

Sitting on the Softsel Hot List for more than three years now, *Flight Simulator II* is one of the more popular software titles of all time. It's one of the more *complicated* programs, as well. When you open the package, out pour two disks, flight maps for four airports, a flight reference card, a 90-page *Pilot's Operating Handbook*, and a 92-page *Flight Physics & Aircraft Control* book. The only thing missing from this classic simulation is an air traffic controller's strike.

You sit in the cockpit of a Piper 181 Cherokee Archer. On the bottom of your screen is an altimeter, turn coordinator, artificial horizon indicator, and several other gauges found in a real plane. The top of the screen shows a pilot's-eye view through the windshield. The droning engine sound is so authentic, it's hard to tell if it's coming from your computer or a real plane flying over your house.

Most rookies like to hop right into the pilot's seat and raise the flaps for takeoff. They don't always stay in the air very long. It takes a while to get the hang of the rudders and flaps in order to master looping, banking, and, most importantly, landing. You start at Meig field, a real airstrip in Chicago. From LAX to JFK, 80 airports are included in the program. In your travels, you'll glide by Chicago's Sears Tower, Seattle's Space Needle, and Manhattan's Statue of Liberty. There's a pause feature that lets you stop and admire these landmarks or perhaps consult the flight manual to avoid smashing into them. You can try to fly between the twin towers of the World Trade Center, but, believe me, it's futile. The total flying environment of the program includes the entire continental United States—10,000 × 10,000 square miles.

You want options? *FS II* gives you plenty of options. You can fly during the day, at dusk, at night, or in bad weather. Cloud types, air turbulence, and even the season of the year can be adjusted. You can look out either side of your plane, behind you, or watch the ground directly below scroll by.

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Your radar comes in handy for spotting distant airports and lining up the runway.

Also included with the program is a World War I flying game in which you trade in your Cherokee for a biplane. The object is to bomb several factories, airports, and other enemy facilities. Once you declare war, enemy planes close in on you, first visible as tiny dots in the distance. You've got a gunsight in front of you, and the space bar on your keyboard sprays machine-gun bullets at them. You're also carrying five bombs, and they whistle shrilly on the way to the ground before exploding on the factories below. If you get hit, you've got to limp back home for repairs and more bombs. Learning how to bank, turn, and dive your plane is a necessity in order to survive in combat.

Bruce Artwick, a pilot himself, created *Flight Simulator II* to perfectly duplicate real flying. This is one of those few programs that should be in everybody's software library.

Sublogic, for Amiga, Apple II, Atari, Atari ST, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: *Jet* (Sublogic), for Commodore 64/128, IBM PC; *Microsoft Flight Simulator* (Microsoft), for IBM PC.

CHAPTER 7

Health and Fitness

Get an Aerobic Workout

If there's one thing that's bad for your body, it's sitting at a computer keyboard all day. You can bet *The New England Journal of Medicine* is working up some fashionable new disease like "keyboard backache" or "disk drive elbow." Just like anything else carried to excess, computers can be hazardous to your health.

Computers can also be *good* for your health. *Aerobics* is the first computer program to give you a physical workout. It's also the first program you use standing ten feet away from the keyboard. As your onscreen computer-generated instructor performs her exercises, you follow her movements. She does 18 exercises, each consisting of a warm-up, aerobics, conditioning, and a cool-down. There's no voice to egg you on, but captions tell you what to do (like "Breathe!" in case you need to be told). Synthesized disco music helps you stay with the pace. Your instructor is quite lifelike and even sports a snappy headband. She seems to be in pretty good shape herself. In fact, it wouldn't hurt her to put on a few pounds, if you ask me.

Why would anybody want to work out with a hi-res Jane Fonda clone when they can just as easily buy a videotape and work out with a living, breathing, squatting human being. Or even with Richard Simmons. Well, videotapes are fine, but since everybody who buys them has a different body type, they have to be geared toward an “average” person. If you don’t have that average body, too bad. You can’t change the tape. You have to do the exercises at the same speed and in the same order that Jane Fonda does them. Even the most dedicated fitness fans get tired of working out in the exact same way, day in and day out.

But a computer is flexible. You can tap a few keys and slow the instructor down or speed her up. You can customize the exercise routine. You can concentrate on the leg exercises, upper body exercises, or any other part of your body that needs

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work. You can do as many repetitions as you want. You can create a workout that will take anywhere from half an hour to an hour and a half, and it will be personalized to your body.

To be frank, Jane Fonda sells a lot more videotapes than Spinnaker will ever sell copies of *Aerobics*. There's a reason—people would rather watch a human being than an animated character. But it's out there if you want it. Feel the burn.

Spinnaker, for Atari, Commodore 64/128.

Other programs to look for: Exercise/Aerobics (*CTRL Health Software*), for Apple II, Commodore 64, IBM PC; MacMuscle (*Tech 2000 Software*), for Macintosh; Fit and Trim (*Andent*), for Apple II.

Build Your Muscles

Veins are popping out of my neck. My arms feel as if I've just gone 15 rounds with Marvin Hagler. The spring I'm pressing against never gets tired. Keep pressing! The only thing I care about is keeping this helicopter at the top of the screen.

I'm not playing a computer game; I'm getting in shape with BodyLog's BodyLink. It's a small box that attaches to a computer and allows it to read the invisible signals from your body. My signals are coming through COMET, a device that plugs into BodyLink. The COMET (COMputerized Muscle Exerciser and Trainer) looks something like those "bullworkers" you see advertised in health and fitness magazines. It's actually a big metal spring that you press against with both hands.

When the COMET is hooked up to BodyLink, and BodyLink is hooked up to your computer, you can do isometric exercises. Of course, you don't need any computer equipment to do isometric exercises. But with BodyLink, you can see how your muscles are working on your computer screen. When you push on the springs, the helicopter rises off the ground. When you let go, it crashes. To make the helicopter fly across the screen and land on its landing pad, you have to exert a constant pressure on the springs for about seven seconds. It's very tough.

The way to make a muscle stronger and bigger is to gradually increase the resistance on that muscle. With BodyLink, you can adjust the computer to do just that. The computer can make it more difficult to get the helicopter off the ground, or force you to keep it in the air for a longer period of time.

The folks at BodyLog have cleverly taken the personal computer and turned it into a sophisticated workout machine. You're doing simple isometric exercises except that the computer gives you feedback from your muscles. With COMET, you can develop and tone ten muscle groups of your stomach,

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chest, and arms. It's more interesting than lifting weights, and it's a lot cheaper than joining a health club.

Actually, BodyLink is a multipurpose biofeedback device. Depending on which modules you plug into it, it can be used to build muscles, coordinate different muscle groups, or reduce your muscle tension level. There's even a sensor which attaches to an exercise bike and monitors your heart rate while you pedal.

Sophisticated electronic equipment like this used to cost hundreds of thousands of dollars and could be found only in fancy health clubs. Now, for a few hundred dollars, you can put it in your rec room.

BodyLog, for Apple II, Commodore 64/128, IBM PC.

Go on a Diet

Everyday we're bombarded with advice on what we should or shouldn't eat. Don't eat fat. Eat fiber. Don't eat sodium. Eat vegetables. Don't eat sweets. Take vitamins. This is all pretty obvious, but unless you go to a trained (and expensive) nutritionist, you never really find out whether the combinations of foods you eat add up to a balanced diet or not. This is one area where both books and computers can do the job, but computers—because they're interactive—do it better.

Nutri-Byte is better than a diet book because it can find out all about you and tailor a program based on *your* personal needs. The program starts by asking you questions about your age, sex, and frame size. Then you're requested to type in all the foods you eat during the day. It's important to be specific here. If you had a cheeseburger for lunch, you have to indicate whether it had Swiss cheese or American cheese on it. If you had orange juice, you're asked to estimate the number of ounces. Every little detail affects the analysis.

The program will then list all the foods you've admitted to eating and tell you their nutritional composition. A fried egg, for instance, contains 199 total calories—52 calories of protein, 146 calories of fat, and 1 calorie of carbohydrate. Did you know that an apple contains more calories than a glass of apple juice? The program has a database of 1200 foods, and you can add any of your favorites that might be missing.

After you go over these numbers, your current diet will be presented as a chart. You may find that your diet is made up of 10 percent protein, 42 percent fats, and 48 percent carbohydrates (it should be 12 percent, 30 percent, and 58 percent, according to the U.S. Senate Select Committee on Nutrition and Human Needs). All of this information can be printed out. That's just the first week of the five-week *Nutri-Byte* plan.

The designers of the program recognize that there are a number of factors that lead to overeating. Instead of eating when they're hungry, many people eat for other reasons—

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because they're depressed, because the clock says it's lunchtime, or simply because the refrigerator is a few feet away. During weeks 2-5, the program asks you questions and analyzes variables that might be relevant to your eating habits. How hungry were you before dinner? What mood were you in? Where did you eat? With whom? It may sound like the Spanish Inquisition, but you could find that you're eating more when you're in certain situations or with certain people. The program will act as an electronic conscience and tell you, "Overeating when fatigued or tired," or, "Too many snacks with Wanda." *Nutri-Byte* will also ask you about your physical activity and take that into account.

Behavior modification techniques are used to set goals, provide feedback, and comment on your progress. The program won't prevent you from stuffing that piece of cake into your mouth, but it *will* tell you what the consequences will be.

Nutri-Byte is very easy to use and is recommended for weight-conscious people between the ages of 20 and 69. The program is sensible; if you tell it you want to lose 80 pounds by Tuesday, it will refuse to run until you consult with a doctor or *claim* to have consulted with a doctor. Crash dieters will be better off with one of those "eat mangos till you drop" diets.

ISC Consultants, for Apple II, IBM PC.

Other programs to look for: The Complete Scarsdale Medical Diet (*Bantam*), for Apple II, IBM PC; The Original Boston Computer Diet (*Scarborough*), for Apple II, Commodore 64/128, IBM PC; The Model Diet (*Softsync*), for Commodore 64/128; Nutri-Calc (*Camde*), for Macintosh.

And when you go grocery shopping for your healthy foods, don't forget to consult The Coupon Organizer (*Andent*), for Apple II.

Find Out How Many Calories Are in a Big Mac

There's a lot of diet software out there. If you're willing to eat right and keep accurate records, you can definitely lose weight with the help of a computer. But what about us poor slobs who dine mostly on Big Macs, Whoppers, and Fudgie the Whale cakes?

For us, there's *The Learning Seed's Fast Food Micro-Guide*, a fun program that provides nutritional information on your meal at McDonald's, Burger King, Kentucky Fried Chicken, Wendy's, Dairy Queen, Taco Bell, Arby's, or Jack in the Box. There's been a lot of controversy lately over the issue of putting ingredient labels on fast-food packages. This program solves the problem. Just type in exactly what you ordered, and the computer provides an analysis of calories, protein, and vitamins A, B, and C, as well as other nutrients, in the food (assuming there *are* some nutrients in the food to begin with).

For instance, let's say I'm a 30-year-old male who goes to McDonald's and orders a Big Mac, fries, a Coke, and a box of McDonaldLand cookies. The computer will tell me the meal consisted of 1235 calories, and 40 percent of the calories came from fat. I'll learn that I got more protein from the meal than I needed. The foods I ordered were high in vitamins B and C, but lacking in vitamin A. Not bad for fast food.

After a hearty fast-food meal, you'll enjoy your dessert more with *Snackmaster*, also from the Learning Seed. Here, you can compare the caloric content of munchies like a Kit Kat bar (180 calories), a Mounds bar (280 calories), or a pair of Hostess Ding Dongs (340 calories).

Who says you have to go on a diet to use a diet program?

The Learning Seed, for Apple II, TRS-80.

Stop Smoking

Can a computer convince you that cigarette smoking is a dangerous and disgusting habit? *The Smoking Decision* attempts to help people examine the smoking issue and make their own decisions. The program was created by David Levy, a physician, and Andrew McLaren, a school principal. It's aimed mainly at teenagers.

The program starts by presenting the known dangers of smoking: increased heart rate, stained teeth, 100,000 fires a year, and an increased risk of heart attacks and lung cancer. A thousand deaths every *day* are connected with smoking, and smoking a pack a day is likely to take four years off your life.

The Smoking Decision isn't a lecture. It provokes students to think about the smoking issue. If you tell the computer you smoke to relax, the computer explains how nicotine makes you tense to begin with. If you tell the computer you smoke to be like your friends, it shows you that strong individuals make decisions by themselves (the *real* theme of the program).

One of the more intriguing parts of *The Smoking Decision* is a "gruesome game." You're shown two groups of people onscreen. The 36 on the right smoke; the 36 on the left don't. You select two smokers who you think will not die from a heart attack. Basing its information on national averages, the computer randomly picks people who will die in each group. Naturally, more smokers die. If you happen to have picked the wrong people, the screen reads, "Dan, both of your people died."

It's morbid, but it *does* drive the point home.

Books and lectures, of course, can drive the same point home. But when you read a book or see a lecture, somebody's *telling* you that you shouldn't smoke. "Nobody tells *me* what to do," you might say to yourself. Rebelling against authority is natural. It's part of growing up and becoming an individual. It's an uphill battle to force a teenager not to drink or smoke if he or she is determined to do so.

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The advantage that a computer program has over lectures is that it's *interactive*. The user makes decisions that influence the program. *The Smoking Decision* never *tells* you not to smoke. It probes, cajoles, and forces you to think seriously and express your feelings about the issue. If, after going through the entire program, you ignore all the facts and decide to smoke, the computer respects your decision:

Okay! We wish you had chosen NOT to smoke cigarettes, Dan, but it's really important that it was your decision. You are the one who made it, knowing all the facts and reasons—and making independent decisions is what gives you control over your life. Good luck, Dan, and try to stay healthy!

If your children smoke, slip *The Smoking Decision* into their disk drive. There are better ways to rebel against authority than smoking. At least purple hair, heavy metal music, and funny clothes don't cause cancer.

Sunburst, for Apple II.

Other programs to look for: Smoking: It's Up to You (MECC), for Apple II.

Design a Jogging Program

Before his death, running guru James F. Fixx was one of the first celebrity authors to translate a popular book into a computer program. His *The Complete Book of Running* sold over a million copies worldwide. When Fixx suffered a fatal heart attack in 1984 while jogging, the release of the computer version—*The Running Program*—was postponed. When it was finally released, the program was dedicated to the memory of Jim Fixx.

Fixx once said, "When I was writing *The Complete Book of Running*, I found myself wishing I could sit down with the individual runner and provide a truly personalized training program. In a book, however, there was simply no way to do that."

In a computer program, there is. *The Running Program* provides every runner with a personal running coach who will help you set goals, regulate your weight, or train for long-distance races. You begin by taking six tests to find out what kind of shape you're in. The "Walk/Run Test," for example, asks you to cover a two-mile distance by any means possible. The time it takes you to complete that distance is an indication of your physical fitness. Tests like this allow the computer to determine how strenuous a running schedule your body can handle.

The program then develops a realistic, day-by-day training schedule for you. By following the schedule and keeping good training records (on disk), you can turn *The Running Program* into a sort of runner's calculator: It can figure out how many days it will take you to get in shape for a long run, predict your probable race times for any distance, and determine your best competitive distance. It will also calculate your ideal weight. If you *really* want to be depressed, the program can compare your performances with world class and Olympic athletes.

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Serious runners will profit most from *The Running Program*, but even weekend joggers can get something out of it. The program tracks and evaluates your diet and shows six stretching exercises to help you avoid injuries. All racing and nutritional records can be graphed and printed out, along with achievement statistics for swimming, cycling, and 30 other types of exercise.

Micro Education Corporation of America, for IBM PC.

There's another way to design your own running program. Now, thanks to the miracle of technology, you can plug a *shoe* into your computer. Both Adidas and Puma—the running shoe archrivals—have released sneakers with built-in computers. The Adidas Micropacer shoes are self-contained units, while the Puma RS Computer Shoe can be plugged directly into an Apple II, Commodore 64/128, or IBM PC.

Both companies have put electronic sensors inside the shoe—Puma in the heel of the right shoe, Adidas under the left big toe. Every time your foot hits the ground, the sensor records it. The tiny computer also has an internal stopwatch so it can tell you how long you ran, how far, how fast, and how many calories you burned. You can even program the Puma shoe to beep when you've run a certain distance.

With the Adidas Micropacer, you just take off your shoe and get the information right away—there's a small LCD screen right on the shoe's tongue. With the Puma RS Computer Shoe, you go home, plug the shoe into your computer with the cable provided, and see the numbers on colorful charts and graphs. The shoe even comes with its own floppy disk.

Incidentally, the computer device in the Adidas Micropacer is removable—you're supposed to take it out once a year to change the battery. But you might want to take it out more often than that. After a year, your computer will probably smell awful.

Other programs to look for: *Be Your Own Coach (Avant-Garde)*, for Apple II, IBM PC; *Runner's Log (Custom Computer Services)*, for Commodore 64/128; *Jogger (Parsons Software)*, for Commodore 64/128; *Jogger Logger (Power-byte Software)*, for Commodore 64/128, TRS-80, VIC-20.

Find Out What Illness You Have

If you have a pain in your lower right side, it's easy to check it out in a book that describes every malady known to humans. But you may have to read hundreds of descriptions before you hit on the correct illness. By that time, who knows what might happen to you?

A computer can turn the process around. You can tell the computer you've got a pain in your lower right side, and the computer can go through all the possible diseases in its memory to find out which one fits your symptoms (in this case, appendicitis). That's the premise of *Family Medical Advisor*.

The program asks yes/no questions about more than a hundred specific symptoms: "Do you have abdominal pain?" "Do you have muscle spasms?" "Do you have abnormal bleeding?" and so on. It takes about five minutes.

Then the program goes into its "computation phase." The computer sorts through nearly 10,000 combinations of symptoms and assigns a score to 200 common (and not so common) illnesses—everything from alkali poisoning to yellow fever. These will be ranked in the order of their probability. Finally, the computer will tell you the illness that best fits the symptoms you've described, as well as ten others that might be possible.

What if you take the test thinking you have the flu, and the computer says you've got bubonic plague? Don't panic. Not many folks catch the Black Death these days. You may have confused *Family Medical Advisor* by including some nonrelated symptoms, like a sore back from shoveling snow or heartburn from eating hot tamales. When you enter your symptoms, try to screen out any that you can attribute to other causes. (Actually, symptoms of bubonic plague are very similar to symptoms of common influenza.) The computer may even list hypochondria as one of the possible illnesses.

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Obviously, consulting *Family Medical Advisor* won't replace your family doctor. It only diagnoses illnesses; it doesn't tell you what to do about them. "We felt that would have been too close to practicing medicine," says a Navik representative. The program leaves the care and treatment of the patient to a qualified physician.

But it can do one thing that even the most skilled doctors in the world find difficult to do—make house calls.

Navik Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: *An Apple a Day (Avant-Garde)*, for Apple II, Commodore 64/128, IBM PC; *Home Health Guide for Children (Clinical Reference Systems)*, for Apple II, IBM PC, TRS-80; *Home Doctor (Dynacomp)*, for Commodore 64/128, IBM PC; *HouseCall (Rocky Mountain Medical Software)*, for Apple II, IBM PC.

Count Your Sperm

The *CellSoft Automated Semen Analysis System* is a scientific program used by doctors, hospitals, and veterinarians around the world.

Semen analysis has long been used to help couples who are trying to have babies. With the old way of doing a sperm count, the technician would peer into a microscope and tediously count the sperm cells one by one with a hand-held device called a clicker counter.

It was very difficult. While the sperm were swimming around, the technician had to count the number of cells, estimate the percentage of them that were moving, and estimate whether they were moving in straight lines or circles.

The error factor of this procedure was as high as 30 percent. With *CASA*, the error factor is 2 percent. The system uses a video camera attached to a microscope and a computer. The video image of the moving sperm cells is converted into a digital image. The computer then superimposes successive video frames over one another to calculate cell count concentration, motility, velocity, and trajectory.

Because a computer is used, the data is much more accurate, and technicians can measure things that were never measurable before. A traditional 15-minute semen analysis now takes 30 seconds. The system is being used for bulls, stallions, boars, rabbits, starfish, and rodents, not to mention human beings.

"Everyone told us it wouldn't work, that the market didn't exist," says Steven Rosenberg, who created *CASA*. "Since then we've turned it into a revolutionary instrument that's completely transforming the fertility field."

When the system was introduced two years ago, it sold for \$2,000 and ran on an Apple II computer. Now, however, it's sold only as a complete \$35,000–\$80,000 system, so it's unlikely that you'll install one in your game room.

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Sorry to disappoint you. The in-home sperm count test is still a few years away. Computer software can be practical, unusual, and wonderful, but it's still not very sexy. But this got your attention, didn't it?

CRYO Resources Ltd., for IBM PC.

CHAPTER 8

Mental Health and Fitness

Analyze Your Own Personality

Psychologist Carl Jung has been dead for 25 years, but his theories live on in, among other places, *Personality Analyzer*. This program attempts to assess Jung's four psychological functions of thinking, feeling, sensing, and intuiting, in conjunction with your own attitudes of judging, perceiving, and introversion/extroversion.

Personality Analyzer asks you questions—22, 44, or 88 (your choice). The questions require you to choose between two opposing responses. A few samples: Are social gatherings energizing or tiring? Do you prefer being separate or crowded? Do you prefer people who are sensible or imaginative? Do you prefer to travel or arrive?

Instead of requiring black or white answers, *Personality Analyzer* lets you respond according to how strongly you feel about a question. By moving the cursor left or right, you move a bar along a bar chart to register your degree of certainty. For instance, "Are social gatherings energizing or tiring?" If you simply hate parties, you'd move the bar all the way to 7 on the side of "tiring." If you slightly dislike parties, you'd just move it to 2 or 3. These subtle distinctions allow the computer to paint a more accurate picture of your personality.

After the last question, the computer "thinks" for a few seconds, cross-tabulates your replies, and delivers your personality profile. You receive numerical scores on Extroverted/Introverted, Intuition/Sensation, Thinking/Feeling, and Judging/Perceiving. Then you're told which of 16 personality types you fit into, along with a list of adjectives that describe you.

The computer then tells you which occupations might be best suited to your personality and what you might be like as a mate. It also describes a characteristic you value strongly

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(such as dependability, privacy, or independence) and your potential weaknesses ("fascination with irresponsible people").

Psycom Software, for Apple II, Commodore 64/128, IBM PC.

Bantam Software's *Know Your Own Personality* takes a different approach. The computer asks you 210 yes/no questions ("Are you careful to keep a supply of canned food in your house in case of an emergency food shortage?") to test for three personality traits—Extroversion/Introversion, Emotional Stability/Adjustment, and Tough-/Tender-Mindedness. At the end of the test, you're presented with charts comparing your various traits and a paragraph that describes your personality.

Taking this test can be fun, as long as your head is screwed on reasonably well. Bantam suggests inviting close friends over and throwing a "personality party." I wouldn't recommend it. Your close friend might not appreciate having everyone see such results as, "You have a low opinion of yourself. You believe you are an unattractive failure. You are characteristically pessimistic, gloomy, and depressed. You are disappointed with your existence and at odds with the world."

That could cool off a party *real* fast.

Bantam Software, for Apple II, Commodore 64/128. *On the same disk is another program, Know Your Own I.Q. (see "Take an I.Q. Test").*

Other programs to look for: Understand Yourself (Dynacomp), for Apple II, Commodore 64/128.

Take the Luscher Color Test

Do you find rooms painted light blue to be calming? Would you buy laundry detergent that came in a purple box? What's your favorite color? These are some of the issues addressed in *The Luscher Profile*.

In 1947, Swiss psychologist Max Luscher observed that people reveal their personalities according to how they respond to varying shades of colors. His test based on that theory—*The Luscher Color Test*—had been in book form for years before it was translated for computers.

The computerized test is simple and takes about five minutes to complete. In the first part, you're presented with a group of colors and the computer asks you to rank them in order of preference. In the second part, you stare at just two colors and indicate which one you like best. (The colors are printed on a card included with the program; computer graphics aren't advanced enough to show the subtle shadings on the screen.)

When you finish the seven test selections, you receive a 12-screen analysis of your personality. The computer tells you about your current mood, what motivates your behavior, your attitude toward emotional involvements, why you act the way you do, how you respond to challenges, what you expect from the future, and your needs, desires, and goals.

This is a sample of what it told *me*:

You feel your current situation is intolerable and you impatiently press for immediate changes. Your tension prohibits you from calmly and patiently considering courses of action. As a result you demand immediate and unconditional fulfillment of your desires and aspirations. By reacting this way, you run the risk of making rash decisions.

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What? That's absurd! I won't accept that nonsense! I want Luscher over here right now. We'll settle this!

But seriously, Luscher believes our color preferences provide a "startlingly accurate insight into the psyche." Supposedly, the test has been used by physicians, therapists, educators, and marriage counselors around the world. It is said to apply to all cultures and languages. According to the booklet included with the program, it has even been effective with people who are color-*blind*. Pretty impressive credentials.

I guess I have a tough time buying it.

After I took the test once, I took it again, this time giving the *opposite* answers. At least three paragraphs in the psychological evaluation were *identical* to the first time I took the test. Also, *Luscher* gives a lot of general information that sounds as if it could apply to anyone—"You want to avoid loneliness and isolation." "You want to be able to determine your own fate." "You long for a trouble-free environment."

Who *doesn't*? That's true of almost all of us. It sounds like the kind of information fortunetellers give when they "peer into your soul."

The theory that looking at a few colors will reveal your personality is a little hard to swallow. I spoke with several psychologists who said that tests like this are used primarily to spice up cocktail parties. And the December 1985 issue of *Psychology Today* said, "...this test has been absolutely slammed by academic psychologists—'an excrescence,' one called it."

I don't know. Maybe I'm being too hard on *Luscher*. Mindscape never said the test is supposed to replace a professional psychologist. Maybe I'm just steamed because I gave the test to my wife, Nina, and this is what it told her:

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The requirements for a satisfying, comfortable relationship are absent from your current situation. You seek contact to help you escape from your unhappy situation...you now need a harmonious, secure, and sensually satisfying relationship.

All right, Luscher. That does it! Step outside. We'll settle this like men!

Mindscape, for Apple II, Commodore 64/128, IBM PC.

Take an I.Q. Test

I.Q. (intelligence quotient) is one of the most controversial topics in education. Experts don't even agree on what intelligence means, much less how it should be tested. Factors like upbringing, motivation, fatigue, and anxiety have all been found to influence I.Q. scores. Bantam's *Know Your Own I.Q.* program was developed by world-famous experts in intelligence H. J. Eysenck and Glenn Wilson. So if you believe in I.Q. tests at all, you can probably believe in this one.

Just what we need—a high-tech way to confirm how dumb we are. The program contains four I.Q. tests with 40 questions in each one. A test must be completed in 30 minutes (there's a clock onscreen). Results can be printed out on your printer. If you *really* want to gloat, you can frame the printout and hang it on a wall.

I.Q. scores can be a dangerous weapon, and Eysenck is careful to note that his test is designed to entertain, not to classify people. In fact, you receive a specific score only if your I.Q. falls between 100 and 130. If you score below 100 or above 130, the computer won't tell you the exact number. In other words, you may find out that you're very smart or very dumb, but you won't find out *how* smart or *how* dumb.

Bantam never mentions this, but the real power of this program is to practice for future I.Q. testing. Unlike most I.Q. tests you'll take, *KYOIQ* tells you the correct answer to each question and explains why that answer is correct. The questions may seem totally incoherent during the test, but when you read the explanations you can understand what the test makers were looking for. Then, if you're really smart, you can use this information on your next I.Q. test.

Bantam Software, for Apple II, Commodore 64/128, IBM PC. *On the same disk is another program, Know Your Own Personality (see "Analyze Your Own Personality").*

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Another I.Q. test program is Avant-Garde's *The Brain Game*. Try a few of these on for size:

- On a standard traffic light, is the green light on the top or bottom?
- Does the Statue of Liberty hold her torch in her left or right hand?
- What two letters of the alphabet do not appear on a telephone dial?
- Which five colors appear on a Campbell's soup can label?

The program is a series of 13 self-diagnostic tests that will help you discover your abilities in creativity, intelligence, logic, vocabulary, recognition, and other areas of cognition. It's based on a successful book by Rita Aero and clinical psychologist Elliot Weiner.

Give this one a shot:

In a row of four houses, the Whites live next to the Carsons, but not next to the Reeds. The Reeds do not live next to the Lanes. Who are the Lanes' next-door neighbors?

- A. The Whites
- B. The Carsons
- C. Both the Whites and the Carsons
- D. Impossible to tell

That's from the standard I.Q. test that leads off the program. After 39 questions like this, you get to see all the correct answers (it was the Whites, by the way) and your approximate intelligence quotient.

I.Q. is only a small part of *The Brain Game*, just as it's only a small part of intelligence. Some of the other tests are quite different, such as the Art Judgment Test, which presents two nearly identical drawings and asks you to differentiate between them. After taking all 13 tests, you may discover that

Answers: bottom; right; Q and Z; red, white, black, gold, and yellow.

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the left hemisphere of your brain (which controls language, mathematics, and hard analytical judgments) is dominant over your right hemisphere (which controls art and creativity) or vice versa.

The Brain Game is also careful not to evaluate your scores and say anything like, "Boy, are you stupid." Even if you get everything wrong, the program will still have a few encouraging words.

Avant-Garde, for Apple II, IBM PC.

Find Out How Mature You Are

One's happiness is determined by one's success in society. True or false?

Some people need a divorce to progress. True or false?

An honest person always can't be polite. True or false?

Generally, complaining is a sign of immaturity. True or false?

These are four of the 220 questions you'll encounter in the International Self-Analysis Institute's *Self-Analysis Program*. The full test attempts to measure an individual's maturity level, the same way an I.Q. test measures intellectual capability.

Dr. Gary A. Hanks, who created the program, felt that telling me the correct answers to the above statements might influence the scores of future test-takers. But he did say that each answer is graded with a C (for correct, or mature) or an X (for incorrect, or immature). You then get a composite Maturity Score from 1 to 100, indicating your maturity level. Hanks claims that the test has a validity above 98 percent and that it "detects faking insanity with incredible accuracy," should that be necessary in your case.

Numbers don't say much about your personality. You'll also get a Maturity Profile, which consists of five interpretations of your test. The program provides certain scales, for example, the Defensive-Change Scale, which indicates your readiness for change in a crisis situation. The Relational Analysis Scale helps two people determine the probability of their enjoying a mature relationship. A couple can analyze where their relationship problems are by looking at categories in which they agree or disagree.

Dr. Hanks believes that maturity and stress are closely related, and that we can all learn to apply more mature responses to the stressful situations we encounter every day.

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But then, if you feel it's necessary to take a test in order to find out if you're mature or not, perhaps you've already got the answer, eh?

International Self-Analysis Institute, for Apple II,
Atari, Commodore 64/128, IBM PC, Macintosh, TRS-80.

Stop Your Bad Habits

In 1957, an experiment was conducted in several movie theaters that were showing the Kim Novak film *Picnic*. At various moments during the movie, the messages "DRINK COCA-COLA!" and "HUNGRY? EAT POPCORN!" were flashed on the screen for a few milliseconds at a time. The audiences did not know about the messages beforehand, and after the film they were not aware of seeing any flashings. But when the theaters tallied up their concessions after the film, sales of Coke had gone up 20 percent and popcorn sales had zoomed 60 percent.

This is known as subliminal stimulation. The theory is that if a message is flashed quickly, the eye will not have time to send it to the left hemisphere of the brain, which evaluates the information. Instead, the information will go directly to the right hemisphere and from there drop unnoticed down into the subconscious mind. The effect is that our subconscious minds will understand the message, even if our conscious minds do not.

In fact, subliminal messages can be even more persuasive than regular messages. If the audience had seen *commercials* for popcorn and Coke, chances are they wouldn't have been so quick to go get snacks.

Subliminal stimulation has been a controversial topic. Many people are against the idea of "tricking" the brain into something, and there is potential for serious harm. Imagine if governments decided to start flashing propaganda messages over "The Cosby Show" or "Dynasty."

Well, now you can flash messages to yourself. *Subliminal Suggestion and Self-Hypnosis* flashes messages on your computer screen at a speed that's too quick (1/30 second) for your eyes to perceive. The program "interrupts" whatever other software you happen to be running. So in the middle of a word processing session, for instance, you can have the computer flash "YOU ARE FAT!" If the theory works, maybe you'll pass up that early afternoon Hershey bar.

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You set the duration of the flash and the interval between flashes. You also write your subliminal messages yourself. Each can be up to 34 letters long.

So if you feel guilty that you're wasting your life playing *Flight Simulator*, cheer up—you can waste your life playing *Flight Simulator* and lose weight at the same time. Or stop drinking. Or improve your golf game. Or stop biting your nails.

There have been hundreds of studies done on subliminal stimulation, and psychologists disagree on whether or not it works at *all*. But at least now it's out there in case you want to run a few studies on your own.

New Life Institute, for IBM PC. *Inquire about availability for Apple II, Commodore 64/128, and other computers.*

Other programs to look for: Mindlink (*Symbiotic Technologies*), for IBM PC; Mind Over Matter (*BCI Software*), for Apple II, Atari, Commodore 64/128, IBM PC.

Improve Your Memory

Does this mean anything to you?

I saw a ton of wash floating in a dam. A chef and his son were there, and the chef was mad at his son.

That's a simple mnemonic device to learn the names of the first four presidents of the United States—Washington, Adams, Jefferson, and Madison. The suggestion comes from *Remember!*, a handy tool for high school and college students trying to memorize course material.

The program works by having you type questions and answers about the material you're trying to memorize. For instance, if you want to learn state capitals, you'd type CALIFORNIA as one question and SACRAMENTO as its answer. Later, the computer will present the word CALIFORNIA, and you'll have to type in the correct response. The computer organizes all the questions and answers, similar to the way teachers use flash cards.

Much of memorization involves forming associations between words, and the computer can help do this. The program contains a simple art and music program, so you can create a drawing or tune to go with each question. If you can't seem to remember that Little Rock is the capital of Arkansas, you might want to draw a picture of an ark sitting on top of a boulder—or whatever image you can dream up.

Learning comes easier if you can test yourself in many different ways. With *Remember!* you can respond to your original question or you can receive the answer first and provide the question (as on the game show "Jeopardy"). The computer is happy to construct multiple-choice questions on the material, or it can put the answers in a list format. At the end of the test, the computer will tell you how many questions you got right and which ones you missed. You can also print out the whole lesson on paper.

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Remember! isn't really useful for *serious* memorization. A question can be only 79 characters long, exactly the length of this sentence. Answers must be even shorter—19 characters. That rules out essays and complicated questions. You can ask yourself only 20 questions per lesson. So if you were trying to memorize the names of the presidents, the program would top out before you hit Chester Arthur. That would be fine if we lived in 1887, but a student in 1987 needs to memorize 40 presidents.

Remember! can, however, be useful for memorizing vocabulary words, foreign languages, dates, phone numbers, chemical symbols, states and capitals, and short lists. Just typing the material into the computer, reviewing it, and taking a test on it makes it easier to learn the material. But this is one of those situations where the computer's solution to a problem isn't a vast improvement over the methods we already have. Home-made flash cards do just about the same thing as *Remember!*, and they're a lot cheaper.

Designware, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Think Fast (*Brainpower*), for Apple II, Macintosh; The Einstein Memory Trainer (*Avant-Garde*), for Apple II.

Designware also makes a "French Vocabulary Disk" and a "Spanish Vocabulary Disk" to go with *Remember!*

Explore Your Sexuality

Sexual experiences are at their best when the encounter is...

- a. casual, because sex is the focus
- b. a deep emotional one, because love is the focus
- c. casual and honest
- d. deep and honest

Have you ever considered a gender change via surgery?

- a. yes, and I had the surgery
- b. yes, and I decided against it
- c. only in my fantasies
- d. no

Whoa! These are a couple of the more printable questions asked by IntraCorp's *IntraCourse*, the only computer program endorsed by Dr. Joyce Brothers. Developed by 14 psychologists, it attempts to analyze your relationships, attractions, sensuality awareness, sexual personality, and sexual problems.

IntraCourse is sort of like Dr. Ruth on a disk. The computer asks you 100 multiple-choice questions about your sex life (many of which will provoke gales of laughter in mixed company). It then generates a 3–15 page sexual profile of you and tells you how you compare statistically with the rest of society. According to IntraCorp, the chance of two people getting the same report is one in a billion.

If a couple take the test together, they'll get a report on their sexual compatibility in 12 areas, and they're advised how to make the relationship better. IntraCorp recommends bringing the program to a party to see which members of the group are most compatible, which could be interesting, to say the least.

The program also includes a sexual dictionary, so you can look up all those words you can't seem to find in *Webster's*.

Having shamelessly taken the test myself, I found it interesting and fun, but not as insightful as I had expected. The analysis is factual, but it seems to be mostly a rehash of your

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answers to the questions. If, for instance, you tell the computer you tend to be passive in a relationship (not that I did), the analysis will say that you're timid and quiet, that you prefer a strong partner, and that such a partner could become too aggressive and abrasive over time.

And if you know you're passive in relationships, wouldn't you also know those other things *already*?

Nevertheless, the program is just *certified* by Dr. Brothers; it doesn't claim to *replace* her. *IntraCourse* is entertaining and informative. I say it's about time we got sex out of the bedroom and into the disk drive, where it belongs.

IntraCorp, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: Treating Erection Problems (*Psycomp*), for IBM PC; Strip Poker (*Artworx*), for Apple II, Atari, Commodore 64/128, IBM PC, Macintosh; MacNudes (*DigiGraphics*), for Macintosh; Nudes (*Educomp Computer Services*), for Macintosh; X-Rated Graphics Library (*MegaSoft*), for Commodore 64/128. If you want the real Dr. Ruth on a disk, try Dr. Ruth's Game of Good Sex (*Avalon Hill*), for Apple II, Commodore 64/128. Couples looking to spice up their love life should consider spending the night with *Interlude II (Recreational Technology)*, for Apple II, IBM PC. The program includes 160 scenarios, everything from romantic to kinky.

An Interview with Dr. Joyce Brothers

After I looked at the *IntraCourse* program, Dr. Joyce Brothers was kind enough to talk with me briefly about sex and computers:

D.G. How long have you been interested in computers?

J.B. For many years. I took my training at Columbia and some of the earliest work in computers to study vision was at Columbia in 1953.

D.G. What drew you to this particular program?

J.B. I think there really is a need for a computer program dealing with sex behavior. There are many people who are embarrassed to talk face to face with a therapist. There are also many people who want to know how they relate to others and have no way of knowing.

D.G. What role did you play in the program? Did you write it?

J.B. No, no, no. That takes many, many years. I went through it step by step to see if anything major was left out.

D.G. Why put it on computer? Why not just write a book?

J.B. Because I think the interactive nature of computers really involves people. It's hard to gain as much from a book. Also, a book can't deal with you and your responses. It has to deal with everybody's responses. Here you have the chance to check your responses.

D.G. Do you think the computer will ever simulate real sex?

J.B. No, absolutely not. That's something only human beings can do. Thank God.

Reduce Your Stress Level

In the sixties, drugs promised to bring us salvation, happiness, maybe bliss. It didn't happen. In the seventies, meditation was supposed to improve our lives and relax our minds if we'd only repeat a mantra for 20 minutes, twice a day. It didn't happen. Now it's the eighties, and we've finally found the one true answer to coping with the stress of everyday life—technology.

Relax is an offbeat device that you strap around your head and then plug the other end into your computer. Three small sensors on the headband record the tension in your forehead by measuring electrical activity in the muscles. They record your level of relaxation.

If biofeedback is Greek to you, here's the scoop—your body is constantly pumping out invisible signals. Your heart is beating, your blood pressure is pulsing, your temperature is fluctuating, your muscles are firing, you're sweating. You're not even aware of it. Talk about body language. The body is a walking transmitter.

These signals are important. When you're under pressure, your heart beats faster, you sweat more and breathe faster. When you're relaxed, everything slows down. The idea of biofeedback is that if you can watch these invisible body signals on a computer screen as they're happening, you can actually manipulate them. This isn't voodoo; it's science. If you can see a blip on a screen representing your tension level, you can lower it—at will.

Basically, *Relax* transforms the signals from inside your body into data your computer understands (digital information), and your computer then transforms the digital information into data you can understand (graphics and sound). Some people can use biofeedback to change their heart rate or even their brain waves at will. With other people, it doesn't work at all.

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As you stare at the screen, the headband sends the information it is registering about your tension level. It's a sensitive gauge—when you tighten your muscles on purpose, the simulated needle jumps up instantly.

Relax doesn't just have you sit there and watch your muscles tense up. At the same time, you wear headphones and listen to an audiotope with a soothing voice that guides you in deep relaxation exercises. In one sequence, kaleidoscopic patterns and colors on the screen change according to how relaxed you are. Far out! It's legal and cheaper than drugs.

Relax was developed with the help of Dr. Martha Davis, a clinical psychologist at California's Kaiser Permanente Medical Center. I'm not sure if this is the thing that will finally bring us eternal happiness, but it will have to do until the next century, when we'll probably be able to insert electrodes directly into our brains.

Brøderbund/Synapse, for Apple II, Atari, Commodore 64/128, IBM PC.

Other programs to look for: Calmpute (*Thought Technology*), for Apple II, Commodore 64/128; BodyLink (*Body-Log*), for Apple II, Commodore 64/128, IBM PC; Learning to Cope with Pressure (*Sunburst*), for Apple II; Coping with Stress (*Psycomp*), for Apple II, IBM PC. The Surf (*JAL Software*), for Commodore 64/128, is an "environmental" program that displays soothing waves crashing to the shore while you listen to "pink noise."

Get Your Head Together

What a mind blower. Dr. Timothy Leary—the Prince of Psychedelia—is back and groovier than ever. Unreal. I think my brains are falling out of my eye sockets.

This is the ultimate déjà vu. It's like Haight-Ashbury all over again.

I can't believe that dude Leary is still around. Like, I thought his lobes were fried *years* ago. Get this—Timothy Leary isn't into drugs anymore. Now he's getting zonked out of his gourd on computers.

Tune in, turn on, boot up. Right on, Dr. Tim. Whoever thought an old dude could still be so outta sight? Far out.

Mind Mirror is the grooviest software ever. All you have to do is hit a few keys and explore what Leary calls "mind realms." Like, you get to go back in time and watch your own conception. Intense. Along the way you'll bump into beautiful people like Eddie Murphy, Bob Woodward, Peter Sellers, and Joan Rivers. There's even a school principal named Jack D. Ripper. Awwright!

If you can't find your cosmic consciousness after that, you must already be blissed out of your skull. This is one far out way to get your head together. And if you don't want to hit any keys, that's cool, too. Just do your own thing. You can sit there and go with the flow if you want. Dr. Tim only puts out good vibes. "Headware," he calls it. Get it? It's all part of Leary's philosophy—TFYQA. "Think for yourself and question authority."

Right on! Power to the people! Don't trust any computer over 30K!

The karma is right, man. After a few hours with *Mind Mirror*, using Lotus' 1-2-3 is like a bad acid trip.

Check out Dr. Tim's rap: "Everyone in the room examines you like some diseased life form."

Leary is so cool, he doesn't even *need* drugs. My old lady had a go with *Mind Mirror*, and it was so intense she had to

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lie down awhile—which really bummed me out. That’s the last time I burn incense next to my disk drive.

As Leary says, “I see the computer as an electronic mirror of the mind. It allows you to take any thought or concept and slice it, microscope it, magnify it, plot it or change it.”

Like, wow, that freaks me out. *Mind Mirror* is legal. I’m so wasted, I almost forgot to hip you to the fact it costs \$34.95. If you don’t have the bread, don’t get uptight. You can probably go out on the street and hustle up a little spare change. Can you dig where I’m coming from?

Electronic Arts, for Apple II, Commodore 64/128, IBM PC.

Read Other People's Minds

“Read any good minds lately?” So began the advertising campaign of *Mind Prober*, one of the more controversial computer programs of 1984. Other ads for the product shouted, “Orwell Said It Would Happen. And It Has.” In an industry where most advertising claims concern megabyte dual disk drives and integrated software capabilities, *Mind Prober* stood out from the pack.

The program doesn't really read anyone's mind. Its purpose is to let you get to know a person very well after just a short period of interaction. In fact, even if you two have never exchanged a single word, you should be able to discover attitudes about work, stress, and sex, likes and dislikes, fantasies, personal values, and personality traits of the person in question.

Here's how it works: You're presented with 60 adjectives that might describe a person, such as *carefree*, *cultured*, *goal-oriented*, *intellectual*, *likeable*, *loyal*, *silly*, *trusting*, and so on. The list was compiled by a clinical psychologist. You are to decide whether or not each of the adjectives fits the person you're trying to read. The instructions tell you to rely on intuition rather than reasoning. The entire test takes five minutes.

When you're done, the computer takes your answers and analyzes how the various personality traits interact with one another. You will then be presented with seven screens of text describing this person in detail—feelings about work (or school, if the person is under 18), how well he or she copes with stress, personal interests, and attitudes about sex. It's almost as if you had broken into the person's psychiatrist's office and peeked in the files.

This psychological profile doesn't make any judgments, but it gives a serious, analytical, and sometimes brutally honest look at the person. *InfoWorld* magazine used *Mind Prober*

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on Ronald Reagan before the 1984 presidential election, and the program responded, "This person would love to be an actor, a politician, or something else that would give him center stage and national prominence." Not bad, huh?

Mind Prober isn't a party game. The profiles are not always flattering. In fact, a husband and wife probably shouldn't sit down and try it on each other unless they're prepared for an argument. In general, the program seems to be pretty accurate, especially if you know your subject well. But then, if you already know your subject well, who needs *Mind Prober*? It's a useful tool, but we don't have to worry about the Thought Police busting down the doors quite yet.

Human Edge Software, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Hypnotize Yourself

We generally associate hypnotism with stage magicians who pull people from the audience and make them cluck like chickens for our amusement. While hypnosis *was* considered occult when it was developed over a hundred years ago, today it's a legitimate medical procedure. People use it to relax or to break bad habits. The police use it to interrogate suspects. Baseball players use it to break out of slumps. Now, instead of paying a trained hypnotist \$50 a session, you can hypnotize yourself at home.

The Hypnotist uses well-known scientific principles such as biofeedback and behavior modification to put you into a trance state and help you use it to your benefit. The disk comes with a device that straps on your wrist and attaches to your pinky. This PSI Biofeedback Device calculates the elapsed time between heartbeats to accurately indicate your pulse rate. Most people can lower their pulse as they watch it change on the screen. In theory, slowing down your heart rate will make your subconscious more receptive to suggestions and learning.

To help you relax, *The Hypnotist* employs Kurian, an Egyptian-looking fellow. "Welcome to the land of virtual time and space...to the universe of the subconscious," he drones. While gentle music plays, Kurian's words on the bottom of the screen ask you to darken the room, and he leads you through deep relaxation techniques. You're encouraged to let tension drain from your head, neck, shoulders, arms, and legs. When your pulse has been lowered as much as possible, a purple pendulum will appear on the screen and swing back and forth like a metronome. After a while it swings more frantically, until the screen looks something like a strobe light. If all goes well, you'll be in a trance by this time.

Once it's got you under, *The Hypnotist* can make suggestions to your subconscious mind. There are three program options—Habit Modification, Regression, and Super-Learning—

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which you select before the relaxation session begins. Let's say you want to stop smoking. The program will "supraliminally" strobe words like *cigarette*, *tobacco*, and *smoking* across the screen. These words will be paired with negative words, such as *scab*. The idea is that if your subconscious mind learns to associate cigarette smoking with something negative, smoking won't seem so attractive anymore, and you'll quit.

Similarly, you can pair positive words with habits you would like to reinforce. If you pair words like *happy*, *healthy*, and *large checks* with *nutrition*, you may be able to improve your eating habits. *The Hypnotist* uses similar techniques to help teachers, speakers, or students memorize (or "super-learn") difficult material.

Kurian isn't going to keep you in a trance forever. You don't have to worry about your disk drive burning up or missing next week's "Miami Vice." After a short time *The Hypnotist* screams like an elephant and tells you to "WAKE UP!" If properly hypnotized, you will feel as if you're coming out of a light sleep.

Hypnosis doesn't work with everyone, even when it's done by a professional hypnotist. But if you're one of those people who are susceptible to it, *The Hypnotist* might be useful to achieve some practical purpose or to break an unpleasant habit.

Psycom Software, for Commodore 64/128.

Other programs to look for: Hypnosis Disk (*Andent*), for Apple II.

See a Shrink

When all else fails, it might be a good idea to seek professional help. Surprise. You can do *that* with your computer, too. *Eliza* is a computerized therapist that was created by M.I.T research psychologist Joseph Weizenbaum in 1966. Weizenbaum wanted to show how computers could be used to converse in English with human beings. *Eliza* was the program that first brought artificial intelligence—the idea of computers thinking and reasoning—to the attention of the public.

The amazing (and amusing) thing about *Eliza* is that it sounds remarkably like a real psychiatrist. *Eliza* will respond to every sentence you type into your keyboard. If you type, “I’m depressed all the time,” *Eliza* has been programmed to respond, “I’m sorry to hear you are depressed.” If you type, “I’d like to talk about my mother,” *Eliza* will respond, “Why do you want to talk about your mother?” Words like *mother*, *depressed*, and *hate* trigger automatic responses from *Eliza* that sound appropriate in the therapist/patient situation. The program is funny because some real psychiatrists conduct their sessions in the same automated, seemingly mindless manner as *Eliza*. Here’s a brief sample of a therapy session with *Eliza*:

Eliza: How do you do? Please tell me your problem.

Me: I need money.

Eliza: What would it mean to you if you got money?

Me: I could buy things.

Eliza: Could you elaborate on that?

Me: Money can be used to purchase material goods.

Eliza: I am not sure I understand you fully.

Me: I’m broke.

Eliza: How long have you been broke?

Me: A long time.

Eliza: Please go on.

Me: I need a job!

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Eliza: Why do you want a job?

Me: To earn money.

Eliza: What does that suggest to you?

And so on. Obviously, *Eliza* is a novelty program. It's too stupid to be used as a real therapist. But when it was introduced in 1966, Weizenbaum was shocked to hear the program was being praised by professional psychiatrists as a breakthrough in the mental health field. "They told me that with *Eliza* we could treat hundreds of patients an hour at state hospitals," he was quoted as saying in *The Naked Computer*. Weizenbaum subsequently became a critic of both artificial intelligence and computers.

Finishing my session with *Eliza*:

Me: I don't have an ending for this chapter.

Eliza: Why don't you have an ending for the chapter?

Me: I can't think of one.

Eliza: How do you know you can't think of one?

Me: I tried.

Eliza: That's quite interesting.

Me: Don't patronize me.

Eliza: What does that suggest to you?

Me: That you can't finish the chapter either.

Eliza: We were discussing you—not me.

Me: Why don't you want to talk about yourself?

Eliza: Do you believe I don't want to talk about myself?

Me: You're avoiding my questions.

Eliza: That's interesting.

Me: Maybe you have a problem of your own you'd like to discuss?

Eliza: Oh, I have a problem?

Me: Are you asking me or telling me?

Eliza: Why are you interested in whether I am asking you or telling you?

Me: You need a shrink yourself!

Eliza: You're not really talking about me, are you?

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Me: I don't see anyone else here. How long have you been avoiding people's questions?

Eliza: Why do you ask?

Me: Forget it. I'm finished with the chapter anyway.

Eliza: Do you believe it's normal to be finished?

Me: Shut up. You've been no help at all.

Eliza: You seem to have avoided speaking of your parents.

Artificial Intelligence Research Group, for Apple II,
Commodore 64/128, CP/M, IBM PC.

Other programs to look for: *Eliza is a gag, but you can actually consult with a real psychologist through your computer. Dr. John Schuster holds personal counseling sessions on The Source, one of the major information networks. You can make an appointment by sending him an electronic message at ID #BCR711.*

CHAPTER 9

Automobiles

Learn to Drive a Car

Not long ago, the male teenager's fantasy was to drive a jacked-up, gas-guzzling, 200-horsepower muscle machine that could go from 0 to 60 in eight seconds—with his arm around a good-looking blonde.

Today, teenage boys dream of owning a 512K computer with a hard disk drive, 2400 baud modem, double hi-res graphics, and a laser printer that can go from 0 to 120 characters in less than a second—with a good-looking blonde telecommunicating from her keyboard thousands of miles away. Times change, but some things remain constant.

The computer hasn't completely replaced the automobile as the American fantasy. In fact, the two have joined forces in recent years. One of the many things your computer can do is help you learn to drive and pass the written driver's test given by the Division of Motor Vehicles.

Let's say you have hay fever and you take an antihistamine before getting into your car. On the way home you get drowsy and your car plows into another car. Can you be prosecuted for driving while impaired?

Yes. Alcohol, drugs, or even emotional stress can make you a hazard on the road. That's just one thing you'll learn with CBS's *Keys to Responsible Driving*. The program was developed in consultation with the National Safety Council and the American Automobile Association.

The program is broken into nine aspects of driving: Control Skills, Signs, Reacting, City and Town Driving, Changing Lanes, Open Roads, On the Expressway, Unfit to Drive, and Higher-Risk Driving. It's really a complete driver's education course on two disks—minus the behind-the-wheel training, of course.

The computer doesn't lecture you on safe driving techniques. Mostly, it asks questions. What does this sign mean? Can you make a left turn at this corner? What should you do if this happens? Right or wrong, you'll get an explanation of

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the correct procedure for real-life driving, with plenty of examples. The program is self-paced, so you can take as much time as you want to absorb the material.

Even veteran drivers may learn a thing or two from *Keys to Responsible Driving*. Did you know that all odd-numbered interstate highways run north/south, while even-numbered ones run east/west? Did you know that a car going 50 miles per hour will travel 75 feet in one second?

Because 36 percent of all drivers involved in fatal crashes are known to be intoxicated, drinking and driving gets a lot of attention. One myth that *Keys* dispels is that you can sober up a drinker with a cold shower, black coffee, or fresh air. "That may turn a drunk into a wet, caffeinated, cold drunk, but will have no effect on drunkenness," according to this program.

Some people may say that *Keys to Responsible Driving* isn't necessary. After all, millions of us passed our driving tests with no trouble in the days before there were computers. But even if *Keys to Responsible Driving* isn't a big improvement over plain old pencil and paper, anything that might help a student learn safe driving practices is worthwhile. Each year thousands of people are killed in automobile accidents because somebody wasn't following the rules of the road.

CBS Interactive Learning, for Apple II, IBM PC.

Other programs to look for: State Drivers Test Study Guide (*Sunset Software*), for Apple II, Commodore 64/128, IBM PC; Driver's Education (*Minnesota Educational Computing Consortium*), for Apple II.

Build Your Own Car

I just spent \$29,702 on a Corvette with power door locks, electronic speed control, AM/FM stereo, cassette deck, twin removable roof panels, custom two-tone paint job, and a clock.

Not really. It was a simulated purchase on Chevrolet's *ChevyTech Diskette*, a disk they're giving away for free to anybody who asks for one.

The program—a thinly disguised advertisement for Chevy cars and trucks—is actually quite intriguing. It allows you to choose any car from the Chevy lineup, equip it with options, price it, and even work out the finances on your computer. Chevy hopes you'll use the program and then go out and buy a real car.

I chose a Corvette from the list, mainly because when I was growing up all the cool guys had "vettes."

The base price of a Corvette is \$27,027, according to the program. If you have that kind of money to spend on a car, naturally you want to cram it with options. The computer lists all the available extras and their prices. After selecting each option, you'll see the price of your car go up.

When you're satisfied that you've constructed the perfect automobile, it comes time to pay for it. This is where the program gets interesting. Acting like a sophisticated financial program, *ChevyTech* lets you monkey around with the numbers so that you can see what effect it has on your loan.

The computer asks you four questions: How much is the car you're trading in worth (if anything)? In how many months do you plan to pay off your loan? What's the current interest rate for automobile loans? How much will your down payment be for your new car?

I decided that my old bomb was worth about \$500. I'd pay off my loan in two years, and 7.9 percent sounded like what the dealers are offering lately. Money comes pretty easily when you're in a simulation, so I put \$20,000 down for my new Corvette.

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In about a second, the computer told the story: My monthly payments would be \$415.76. The total amount of interest I'd pay on the loan over two years would be \$776.24.

For the fun of it, I decided to see what would happen if I changed my down payment. Instead of putting down \$20,000, what would happen if I made a down payment I can actually afford—\$2.34?

Without even making a remark, the computer obediently zipped out the answer. My monthly payments would now be \$1,319.29. The total interest on my loan would become \$2,463.30.

Nobody would make such a ridiculous arrangement, of course, but it's interesting to see how you can manipulate numbers on the computer in an everyday situation and observe the consequences.

The only problem with *ChevyTech* is—what kind of a deal can you get from a computer?

Chevrolet Motor Division, for Apple II, Commodore 64/128, IBM PC.

ChevyTech isn't the only way you can build your own automobile on a computer screen. *Car Builder* is a fascinating program automobile enthusiasts should investigate.

You've heard of word processing. You've heard of food processing. This is automobile processing. You design and edit your car onscreen. You pick from 25 engines, five transmissions, three types of suspensions, and six types of steering. You determine the length of the wheelbase, how much the car will weigh, and what kind of tires you'll use. The exterior can be shaped into a van, a sports car, or a station wagon.

When you finish your design, the car gets tested—on a test track and in a simulated wind tunnel (to see how aerodynamically sound it is). The computer gives you feedback like, "Given a fuel tank of 12 gallons, you'll get X number of miles to the gallon," or, "Due to the type of steering you've selected, you'll have difficulty turning on a road at X miles per hour."

Weekly Reader Family Software, for Apple II.

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Chevy is also exploring the idea of a computer that lets you custom design a car and then scan a list of dealers in the area to see who has one.

Ford is testing an interactive system that may replace the car salesperson: "Selection Center." View all models of Ford cars on a laser disc system. Pick the car you want, and tell the computer the kind of car you have to trade in and what your budget is like. The computer calculates your trade-in value and your monthly payments, and helps determine the best financing plan.

Plan Your Family Trip

Anyone who's ever tried to fold up a map of the United States while driving 55 miles per hour will appreciate *Roadsearch-Plus*, the first computerized road atlas. The program is designed to help you plan out your next vacation.

All you do is type in your present location and the place you plan to visit. *Roadsearch-Plus* will calculate the shortest practical route between the two locations. It also tells you the correct directions, how many miles you'll be traveling, how much time the trip should take, and how much gas you'll need to get there. You can print out all this information on paper so you can take it in the car with you.

The *Roadsearch-Plus* database includes 406 cities and 70,000 road miles in the United States and Canada. The program can be customized by adding up to 50 more cities and 100 road segments. You can even command the computer to plan your trip along routes that will avoid tolls.

Roadsearch-Plus was developed by Columbia Software, which may sound like a big corporation, but is actually a husband and wife team in Columbia, Maryland. John, who does the programming, doesn't like to reveal his last name because he has a full-time job—his boss doesn't like employees going off and starting their own software companies. In addition to creating the programs, John and Helene take all the orders for *Roadsearch-Plus*, stuff and stamp all the envelopes, and send them out by themselves.

"We're not interested in creating the next *VisiCalc*," John says. "We just want to be known for making the best computerized road maps."

Columbia Software, for Apple II, Commodore 64/128, IBM PC.

Fix Your Car

Eventually, that bomb you were suckered into buying is going to break down. If you don't know the difference between a lug nut and a crankshaft, you'll probably have to bring the car in and pay a mechanic a small fortune just to look under the hood. That is, unless you have *Computer Mechanic*, a handy program from Softsync.

Let's say you're having problems getting your car started in the morning. After loading the Diagnostic section of *Computer Mechanic*, you'll be given two choices—"Car won't start" and "Starts but runs roughly." You select the latter. The computer will then display various ways your car may be starting roughly—"Engine misfires," "Poor pickup," "Rough idle," "Hesitates on acceleration," "Car stalls," "Problems when wet," and "Car backfires." If you select "Rough idle," the computer will tell you to check your sparkplug wires—the most likely cause of this particular problem.

In all cases, your responses determine the advice offered by the program. That example may sound elementary to somebody who knows cars, but it could save a novice some money, time, and inconvenience. Another section of the program tells you how to rotate your tires, change the oil, and do some simple repairs yourself. You're guided every step of the way.

Computer Mechanic is also a personal auto maintenance notebook. You can keep the records on up to 100 vehicles, and you can update information on oil changes, tire rotation, engine tune-ups, and brake jobs. The "When to Check" section tells you how often these procedures should be carried out, and simple color-coded graphics show you where to look and what to do. The program is especially helpful for taxi and trucking companies, but can be useful even if you own only one car.

Computer Mechanic isn't going to put Mr. Goodwrench on unemployment, but it might save you a few bucks and teach you the basics of automobile maintenance.

Softsync, for Commodore 64/128.

Prevent Drunken Driving

Before computers, the only way to teach young adults about the danger of drinking and driving was to badger them with boring lectures and pamphlets. Often, these warnings come off as threats. Some teenagers go out drinking and driving not because they like it, but because they want to rebel against the adults telling them not to.

The computer, on the other hand, can simulate a drinking situation so the user sees the effects of alcohol on the body without having to get drunk and experience the consequences in real life.

The Party takes you and your friends to a party where everyone is drinking. Each party-goer has the choice of beer, wine, scotch, or a soft drink. Before you bend an elbow, the computer asks for your age, sex, weight, if you plan to sip or gulp down the booze, and if you'll be eating pizza. All these things influence how quickly the body reacts to alcohol. (Food slows down the process; gulping speeds it up. Women get drunk faster than men; thin people faster than heavy people.)

Then go have a good time. Get wasted. Drink as much as you want, mix beer and wine, experiment—it's *just* a simulation. You can have up to 15 drinks in an hour. Your body can't handle it, but the computer can.

After the first simulated hour of drinking, the computer will tell you how the liquor is affecting you. If you've had a couple of beers, you'll be told, "Bob, you have a tingling sensation in your arms and legs." Bob is also informed that his blood alcohol concentration (BAC) is 0.005 percent and that he feels "pleasantly happy." These reports are based on what would happen in real life, in the same circumstances.

Bob will also play a little *Space Invaders*-type game to test his reflexes and perception. The game has been cleverly designed to change according to how drunk you are. If your

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BAC is low, the game runs normally and is pretty easy. When your BAC rises, the spaceships start moving erratically and the game is very hard—showing how your perception becomes distorted under the influence of alcohol.

Every simulated hour at the party, you can drink more, play the videogame, and get a report on your condition. When you reach 0.01 percent BAC, you'll be told that you're legally drunk (which is better than being *illegally* drunk). If you reach 0.15 percent, you start feeling sick and are taken home by a simulated cab. If you reach 0.30 percent, you pass out. That guy who took 15 drinks in an hour will probably reach 0.40 percent. The guests will be informed that he has died from alcohol poisoning and the party, of course, is over.

Assuming nobody gets that carried away, the party ends at midnight, and each guest has the option of driving home, taking a taxi, calling a friend, or asking another guest for a lift. One of five things will happen: you'll get home safely, you'll run into a tree, you'll get stopped by the police, you'll hit another car, or you'll hit another car driven by a drunk person. The BAC of each driver determines the chances of an accident.

The Party makes no moral judgments and doesn't do any preaching about drinking. But participating in the simulation paints a very obvious picture of what happens to your body when you drink and drive.

Marshware, for Apple II.



CHAPTER 10



The Arts

Compose, Play, Record, and Listen to Beautiful Music

The electric guitar and the computer are technological developments that will probably change the history of music. The electric guitar already has. It was invented in 1933 by Bob Dunn and became popular 18 years later when Les Paul played one on "How High the Moon." Today, the sound of electromagnetic signals created by vibrating steel strings is familiar to us. But in the 1950s, it was shocking. It was loud and rowdy. Kids learned that they could crank up their amps and drive their parents crazy.

Rock-and-roll, at age 31, can no longer be considered a musical fad. The technology of the electric guitar created a new form of music, and that's not something that happens every decade, or even every century.

But now, in the 1980s, it may be happening again. Computers are creating sounds that have never been heard before. The guitar is no longer the only instrument on the stage. More and more professional musicians are turning to synthesizers and other electronic devices to create new and different sounds.

The *real* power of the computer is that it brings the tools of music to the masses. A good piano costs around \$3,000 and takes up a lot of space in the house. But a personal computer can be a music machine for less than half that price, and you don't even have to be a skilled musician to "play" one. When you consider that the computer can also be used to perform hundreds of other tasks, it's not surprising that parents are starting to pass up the traditional piano lessons and let their children learn about music on the computer. These children, don't forget, are the musicians of tomorrow.

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With a music software program, a musician has more flexibility than with any conventional instrument. In addition to creating its own distinctive “synth” sound, a computer can duplicate the sounds of dozens of other instruments. It can mimic sound effects as diverse as animals, explosions, and human speech. The touch of a few buttons allows a computer musician to manipulate volume, waveform, frequency, timbre, envelope, and the other elements of sound. You can change the tempo of a song or play it backward. You can play a bass melody, lead melody, and a rhythm track, and blend them all together to play at the same time. You can save your tunes on a disk and print them out in standard musical notation. You can play a single note and hold it in the air forever, or at least until your neighbors call the cops.

All these things can be done on a computer as inexpensive as a Commodore 64 (about \$150). In fact, the Commodore has musical capabilities superior to those built into computers which cost much more.

There are dozens of music programs available for every computer. Some work like word processors to help you compose and edit musical compositions. Others specialize in recording and performing. A company called Melodian makes piano-style keyboards that can be plugged right into the computer. Here are a few programs that both Juilliard graduates and complete musical illiterates may enjoy:

Music Construction Set. Drag notes, sharps, and rests across the screen with your joystick and place them anywhere you’d like on the musical staff. Hit the fire button and hear your song. This is one of the easiest music composers to learn. (Electronic Arts, for Apple II, Atari, Commodore 64/128, IBM PC; deluxe version for Amiga, Macintosh.)

MusicWorks. As many as four tracks may be played simultaneously over an eight-octave range, using eight instruments. The program comes with a huge collection of familiar tunes, which you can edit and rearrange. (Hayden Software, for Macintosh.)

Melodian Musical Keyboard. A piano keyboard that plugs into the computer. The range spans nearly three and a

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half octaves, and you can imitate the sounds of bagpipes, harpsichords, and 17 other instruments. (Melodian, for Apple II, Commodore 64/128, IBM PC.)

Is it cheating if we can make music so easily? It doesn't really matter; the results are what count. Manipulating music and sound is among the computer's most powerful applications.

Turn Your Humming into Sheet Music

Imagine humming a tune into a microphone and seeing the sheet music of that tune instantly appear on your computer screen. You can do it with *Voice Master*, a fascinating peripheral by Covox.

Beethoven, unfortunately, didn't have the advantage of a *Voice Master*. He had to sit at the piano and tediously write every note that every instrument of an orchestra would be playing. The Beatles never had a *Voice Master* either. When they started, they didn't even know how to *read* music. The tunes they dreamed up playing guitar were written in standard musical notation by people who understood written music.

That's the way music has always been written. Either you wrote it by hand, or you played your tune for somebody who *could* write it by hand. With *Voice Master*, it's possible to compose songs if you can't write music, read music, or even *play* music. As long as you can sing, whistle, hum, or even grunt out a tune, you can be a composer.

Voice Master consists of a Walkman-sized box, a floppy disk, and a headset with a microphone that will make you look like a singing air traffic controller. Using the *Voice Harp* program, all you do is whistle your happy tune into the mike and watch the notes land in the right places on the musical staff. You sing an A-flat, and an A-flat note slides onscreen. You don't even have to know what an A-flat *is*. This is one of those few products that make people stop in their tracks and stare at the screen with wonder.

When you finish singing, you can play the tune back. Is it too high? Tap a key and bring it down an octave. Is that third note wrong? Hit a few keys and edit it. You can change the pitch or duration of any note, move the rests around, and turn your improvised ditty into a polished song. When your song is perfect, turn on your printer and put it out. Instant sheet mu-

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sic. You can also save the tune on disk and edit it over and over again, using the sound of a banjo, xylophone, jaw harp, or a dozen other instruments.

A word processor won't make you a great writer, a graphics program won't make you a great artist, and a music program won't make you a great composer. But all of them make it *easier* to create something. If you don't have a song in your heart, *Voice Master* isn't going to put one there. But if you do, it just might help you get it out.

Covox, for Apple II, Atari, Commodore 64/128, IBM PC, MSX.

Voice Master is also a sophisticated speech synthesizer. You can speak up to 64 words into the microphone and hear them played back, speeded up, slowed down, and even re-played backward. It's possible to create your own computer programs with human speech in them.

Other programs to look for: An equally strange device is *Z-Glove* (Sharedata, for Apple II, Commodore 64/128). This is an actual cotton glove that connects to your computer. There are sensors in all the fingers and when you move your hand, you manipulate objects on the screen. It's possible to conduct a simulated orchestra or play "air guitar" and actually change the music by waving your hands around. Weird stuff.

Learn to Play Guitar

Elvis Presley probably provoked a million or so teenage boys to learn how to play the guitar back in the late fifties. Today those boys are grown up, providing role models for the next generation of guitar wizards. But this coming generation has something Townsend, Clapton, McCartney and the rest never had—a computer and a program called *Easy Guitar* developed by David Perry, a Seattle musician and record producer.

There are dozens of computer programs that teach how to read, write, and create music. But for some reason, there are only a few that teach how to *play* a musical instrument.

Easy Guitar follows a very simple step-by-step method. Players are shown a graphic labeling the parts of a guitar, and the computer generates the six tones needed to tune the strings. (Unlike humans, computers have perfect pitch.) A short lesson in music theory follows, but you don't need it to make beautiful music. The Beatles, among others, proved that.

In some ways, the computer is a better teacher than a book or audiotope. A book can show you where to place your fingers on the frets. A tape can let you hear what it should sound like. But the computer can do both—and at the same time. In demonstrating how to play scales, for instance, it shows you the correct fingering, and you hear the scale being correctly played. A guitar teacher can do this, too, but rarely for a lifetime fee of \$39.95.

The program contains diagrams of the 50 most common chords you'll need, which can be practiced in over a dozen different progressions. During practice sessions the computer plays the chord changes with you, backed by a bass and drum simulation. You can set the band to play as fast or slow as you'd like with a metronome that clicks on each beat.

Easy Guitar is mostly for the novice guitar player. There's no mention of finger picking at all, and little guidance on strumming or what to do with the hand that strikes the strings. But I found *Easy Guitar* to be the perfect way for peo-

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ple who have never played a note to get their feet wet. You can learn at your own pace. You don't have to plow through a thick instruction manual—in fact, instructions aren't even included in the program. Everything you need to know is right up there on the screen.

DJ Software, for Commodore 64.

Other programs to look for: Guitar Master (*MasterSoft*), for Apple II, Commodore 64/128; Guitar Wizard (*Baudville*), for Apple II; Strum Along Songs (*DJ Software*), for Commodore 64/128; Chord-Power (*NewArts*), for Commodore 64/128. *MasterSoft* also makes Trumpet Master, Clarinet Master, Flute Master, Saxophone Master, and Singing Master for Apple II and Commodore 64/128.

Let George Gershwin
Play Piano
in Your Home

The story starts at the turn of the century, when a company called QRS was founded in Buffalo, New York. Player pianos were pretty much state-of-the-art at the time, and QRS manufactured music rolls to use with the pianos. In fact, the company is still making piano rolls today. Last year QRS sold a quarter of a million of them.

Around 1901, QRS took a conventional player piano and turned it into what was called a marking piano. With a marking piano, every time a key was struck, an ink mark was made on a blank roll of paper. The marks indicated exactly which keys were struck and the duration of each note. They took these rolls and punched holes where the ink marks appeared. That made it possible for pianists to create rolls of their own personal piano playing for a player piano. In effect, they were “recording” the music with these punched holes on paper.

Naturally, an effort was made to record the famous pianists of the day. In 1920, QRS sat Scott Joplin down at the marking piano to play his "Maple Leaf Rag." Years later they got George Gershwin to do "Rhapsody in Blue" and "Swanee." The playings of Fats Waller and Eubie Blake are in the QRS library, as well as contemporary artists such as Peter Nero and even Liberace.

Recently Micro-W, a computer company, approached QRS with the idea of converting all those piano rolls into floppy disks. "Player piano rolls are essentially digital information," says Micro-W's Bob Steeves. "If you think about it, the player piano is the world's first home computer."

QRS didn't know much about digital information or computers, but they did know a good idea when they saw one. A deal was worked out, and Micro-W equipped a special player

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piano with switches on each key to turn the QRS paper-roll music library into floppy disk data. It's called the *QRS Digital Music Library*.

The entire QRS piano roll library consists of 2500 rolls and 10,000 songs. So far, Micro-W has released 110 disks, with 6 songs on each one. In addition to the recordings by the original artists, there's a disk of Elvis, the Beatles, *Ain't Misbehavin'*, *My Fair Lady*, a disk of Strauss waltzes, Irish songs, and TV themes.

In all honesty, "Maple Leaf Rag" doesn't sound exactly like Scott Joplin is sitting in your living room. For one thing, Joplin never got down and funky on a synthesizer. For another, the *QRS Digital Music Library* doesn't capture what is called the "expression" of the piano. In 1900, the technology didn't exist to record Joplin's foot hitting the pedals or his personal touch on the keys. But the note information and tempo have been recorded precisely. It's the closest you can come to listening to a genius like Joplin playing his own songs.

With today's recording technology, there's no need for Stevie Wonder or Billy Joel to record their piano playing on paper rolls. But in 1900, musicians like Joplin couldn't duplicate their music so easily. By recording these musicians with a player piano, QRS preserved their music for history.

Micro-W, for Amiga, Apple II, Atari ST, Commodore 64/128. A MIDI-equipped instrument is also required.

Be a Computer Picasso

Unfortunately, the greatest artist of this century didn't live to see the day when we'd be painting on our television screens. Picasso died four years before the invention of the personal computer. We'll never know what this genius would have created if he had had the chance to experiment with an electronic canvas. The computer is an incredibly powerful painting machine that's easy to use and fun for everyone from a four-year-old child to a professional artist.

Briefly, here's how computer art programs work. The screen is made up of tiny dots, called pixels, which are something like the dots you see when you look closely at a newspaper photo. The more dots on the screen, the smaller each dot will be and the sharper the image will be. Each of these dots can be turned on or off; when they're turned on, they can be filled in with various colors or shades of gray. A graphics program enables you to turn on various combinations of dots to form images on the computer screen.

There are dozens of art programs for every computer. My favorite is Bill Atkinson's *MacPaint*, which came free when I bought my Macintosh. First, *MacPaint* can do what most of the art programs can do—you move the cursor around the screen (with the mouse) in any direction you'd like, creating free-form lines and shapes. The lines, or "brush strokes," can be made in various thicknesses. The computer can form perfect rectangles, circles, and straight lines of any size, which can be placed anywhere on the screen. You can draw a shape on one side of the screen and make its mirror image appear simultaneously on the other side. You can draw one object and "rubber stamp" it all over the screen. You can "zoom in" on a section of the drawing and turn individual pixels on or off for detailed work. You can fill in a large area of the drawing instantly, as if you had poured a bucket of paint over it.

Most art programs do all those things. *MacPaint* does even more. The program contains 32 different brush shapes

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and 36 fill-in patterns (or you can invent your own). There's an airbrush function that lets you shade objects to give them depth. There's an undo function (also called "oops") that erases the last thing you did and, thus, eliminates disasters. You can draw a shape and move it around the screen or transfer it to your scrapbook, so it can be dropped into reports, letters, or other word processing files. You can add text to your drawing in eight type styles and eight sizes, and the letters can be bold, italic, or outlined. You can even draw a shape or type a word and stretch it—like a rubber band—across the screen. You can flop it backward. Drawings made by professional artists with *MacPaint* are incredible.

There's one weakness with *MacPaint*—it's black and white. Apple chose to give Macintosh fine resolution at the expense of color. If you want to fill your screen with color, there are plenty of graphics programs for other computers that will do that. Many of them, however, won't produce as sharp an image as *MacPaint*.

No art program will produce as sharp an image as you can by drawing with a pen and paper. There simply aren't enough dots on a computer screen to form smooth, curved lines. Professional artists may find this puts a limit on what they can create with a computer. But for amateurs who can't even draw a smooth curve with pen and paper, graphics programs are the greatest thing since the invention of the toothpaste pump. They do for painting what word processing does for writing—and you don't even have to clean the brushes when you're finished.

Apple, for Macintosh.

Other programs to look for: *Dazzle Draw (Brøderbund)*, for Apple II; *DeluxePaint (Electronic Arts)*, for Amiga; *D.E.G.A.S. (Batteries Included)*, for Atari ST; *KoalaPad/ Micro Illustrator (Koala Technologies)*, for Apple II, Atari, Commodore 64/128, IBM PC; *The Graphics Magician (Penguin)*, for Apple II, Macintosh.

Create Your Own Cartoons

Human beings can still do a few things better than computers, but computers can usually do them *faster*. It makes sense that we would use computers to do things that are slow, tedious work for people.

Probably the most tedious activity in existence is cartoon animation. Walt Disney's team of animators spent a full year drawing the thousands of images for *Dumbo*, a movie that ran only 64 minutes. And that was relatively fast for Disney. His first full-length animated feature—*Snow White*—took three years to complete. If you've ever made a simple stick-figure flip book, you know what a chore it is to draw all those pictures.

Now professional animators are starting to use computers to speed up their work. Instead of drawing 24 slightly different images by hand to make up just one second of animation, the computer can automatically move objects in tiny increments across the screen. You can do it at home with *Movie Maker*, from Electronic Arts.

Movie Maker shares some of the features of computer art programs. You can draw pictures on your TV screen, change colors, make mirror images, and zoom in for pixel-by-pixel work. You can copy a shape and duplicate it all over the screen—to create a forest of trees, for instance. But you can also make those pictures move. You can draw a dog and make it run down a street, draw a child playing with a balloon, or just let your imagination run wild. Invent scenes and have your characters jump in the air or run back and forth across the screen. Because a computer is running the show, you can change things around. Speed the action up or slow it down. Change the color of the background. Play a sequence over as many times as you'd like. The computer will even smooth out any jerky motion for you. When you're done (300 frames

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maximum), add a title screen and sound effects like whistles, drums, and train noises. If you've got a VCR, you can chain your little movies together into a longer flick.

Electronic Arts, for Apple II, Atari, Commodore 64/128.

Brøderbund's *Fantavision* is a more recent animation program that is simply remarkable. Billed as a "special effects generator," its special talent is *tweening*. This means you can draw two objects in different positions, and the computer will fill in smooth motion between them. So if you draw one stick figure lying down and one standing, *Fantavision* will create an animation sequence showing the figure getting up. The computer will insert as many as 64 intermediate positions, making the resulting animation appear smooth.

Taken a step further, *Fantavision* can do "transformations," too. Draw a worm and a moose on your screen and the computer will transform the worm *into* the moose. Draw your name and your friend's name, and the computer will transform the letters from one word into another.

You have to see it to believe it.

Brøderbund, for Apple II.

Create Your Own Comic Strips

ZAP! FOOM! BLAM! SHAP! ARGH!

Last year Mike Saenz and Peter Gillis created *Shatter*, the world's first comic book produced entirely on a computer. Now *anyone* can create computerized comics. At the 1986 Summer Consumer Electronics Show, no less than four manufacturers brought out software programs for do-it-yourself comic geniuses. All four programs give you the tools to create your own comic strips. All four approach the topic in different ways.

The most ambitious—and spectacular—is Mindscape's *ComicWorks*. It works much like any other graphics program, but it's been "tweaked" so that it specializes in comics. A library of canned images (spaceships, planets, faces, and so forth) is included. You can use them or edit them for your own creations. The graphics were drawn by Mike Saenz, who illustrated *Shatter*. The drawings look great on the black-and-white Macintosh screen, and you can color them in after printing them out.

ComicWorks lets you position dialog balloons and thought balloons of all sizes to get your characters talking. Of course, you word-process the text, and special jazzy comic book typefaces make the words jump off the page in true comic form.

The problem with *ComicWorks* is that it's made only for high-end computer systems like the Macintosh.

POW! Problem solved. First Star Software's *Comic Strip Maker* is a similar program for less expensive computers. CSM comes with some stock clip art of people, backgrounds, and animals, as well as a few stock jokes you can throw into your strips. First Star owns the software rights to Superman, Wonder Woman, "Romper Room," and *Mad* magazine, and these characters will be available on separate disks to insert into your strips.

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Younger comic lovers may prefer Bantam's *Walt Disney Comic Strip Maker*. It contains 180 color graphics of Mickey Mouse, Minnie, Goofy, Donald, and other familiar Disney heroes. You can't actually draw on the screen with this program. But you *can* take a canned image of Mickey Mouse and crop him, move him around the screen, put him in different backgrounds, and flop him backward. You can put a balloon over his head and fill it with a preprogrammed phrase or make up one of your own. *Walt Disney Comic Strip Maker* is geared for children ages seven and older.

If you hate mice, there's always DLM's *Create with Garfield*—basically the same type of program with everybody's favorite cat.

You can imagine how these four manufacturers felt when they saw so much competition releasing comic strip programs at the same time. But for us consumers, it's good news. We have a nice selection of comic book software to choose from right away.

Mindscape, for Amiga, Atari ST, Macintosh.

Bantam Electronic Publishing, for Apple II, Commodore 64.

First Star, for Apple II, Atari ST, Commodore 64/128.

DLM, for Apple II, Commodore 64/128.

Make Your Own Rock Videos

What do you get when you combine an art program with a music program? Before you answer, throw in an animation program to get your figures moving. Next, top it off with computer-generated music by Michael Jackson, Bruce Springsteen, or other well-known artists. Now, what do you have?

If you answered computerized music videos, you're right. Two companies are producing disks of contemporary music that allow you to make artistic creations that go along with the tunes. Amazingly, you don't have to know anything about music, art, rock-and-roll, or computer programming to use them.

Sight & Sound's *Computer Song Albums* are disks filled with popular tunes arranged with computer-generated bass, rhythm, melody, and harmony. Songs from Michael Jackson ("Thriller"), Joe Jackson ("Steppin' Out"), Willie Nelson ("On the Road Again"), the Eurhythmics ("Sweet Dreams Are Made of This"), Van Halen, and Culture Club are included, along with some blasts from the past like "Duelling Banjos," "Classical Gas," "The Hustle," and even the theme song from "Charlie's Angels." You can use a joystick to change the instrument sounds and add special effects. Color graphics will dance across the screen. The songs have no vocals and don't sound like the original records, but they are excellent, full-sounding synthesized music.

For some people, that will be enough. To create a video, you've got to add *Music Video Kit*, also from Sight & Sound. This program can be used like a standard drawing program to create your own graphics, or you can use the library of preprogrammed objects on the two disks. There are a dozen background scenes, such as city streets, haunted houses, deserts, and sunsets. The available "actors" include robots, flying saucers, musicians, and break dancers. By putting a hit song together with the background and animated foreground

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of your choosing, you can create your own rock video—and nobody's going to give you a hard time, even if your home-made videos are in poor taste. And if the idea of creating a video to the tune of "Charlie's Angels" turns you off, you can write your own music.

Passport Music Software has taken another approach to computerized rock videos. Their *Computer Hitware* disks include "albums" from individual artists. Their Duran Duran package, for instance, includes ten songs from that band, including hits like "The Reflex," "Hungry Like the Wolf," and "Union of the Snake." The Michael Jackson album includes all the songs from *Thriller*. You can also buy albums of computer music by The Police, Huey Lewis and the News, Bruce Springsteen, and Van Halen. The graphics that go with the songs are colorful, kaleidoscopic images, which can be altered by the user. The lyrics to the songs are also included.

For the time being, *Computer Hitware* and *Music Video Kit* are no threat to MTV. But as new computers get even more sophisticated, they'll put increasingly powerful graphics and musical capabilities into the hands of the average music lover.

Sight & Sound Music Software, for Commodore 64/128.

Passport Music Software, for Apple II, Commodore 64/128.

Create Your Own Greeting Cards, Signs, and Banners

Have you ever wondered about those romantic couples snuggling by the gorgeous sunset on greeting cards? Who are they, anyway? Are they just snuggling naturally, or are they getting paid by the hour to snuggle? And what do they have to do with saying "Happy Birthday" to your Aunt Gertrude?

Buying store-bought greeting cards is nice, but there's something disconcerting about taking Hallmark's mass-produced sentiments and mailing them off as if they were your own. If we had the time and the talent, we would probably write and draw homemade cards, which are usually more welcome than anything you can buy off the rack anyway.

Using a program like Brøderbund's successful *Print Shop*, even the least talented artist can create beautiful work—greeting cards, stationery, party invitations, jumbo banners, signs, handbills, report covers, or just about anything else you'd want to run through a printer.

Instead of an artist, *Print Shop* makes you an art *director*. You don't have to create the art, you merely select it, position it, and approve it. The program is so easy to use, you don't even need the instructions. Simply load the disk, and the program will ask what kind of art you want to make. Let's say it's a greeting card. The program contains some canned cards—birthday, Christmas, season's greetings, Valentine's Day, anniversary, thank you. Just insert the recipient's name and the card is finished. But most people will want to create their own cards from scratch.

First, you'll pick a border pattern. There are nine available, from simple line borders to flowers, lattices, stars, and hearts. Just hit a key to make your choice. Then you pick a picture. There are 50 professional drawings in the program—

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birthday cakes, teddy bears, clocks, butterflies, pumpkins, and more. These can be printed in three sizes and positioned anywhere on the page. You can also alter the images—change the hour on the clock, for instance. You’ve already got a nice-looking greeting card.

Then you’ll want to put in your message. *Print Shop* offers eight types of letters. One looks like script; another looks like stencil letters; others look like computer letters or wanted posters. Use whatever matches the mood of your card. The letters can be solid, outlined, or three-dimensional, and you can center them on the page and make them in different sizes. When your masterpiece is complete, save it on a disk and print it out as many times as you wish. The program even comes with brightly colored paper and matching envelopes.

The same basic procedures are used for creating banners, letterheads, and other artwork. You can also go into the Screen Magic mode and superimpose letters over swirling kaleidoscopic patterns.

The only problem with *Print Shop* is that it may force those romantic couples by the sunset to stop snuggling and go get *real* jobs.

Brøderbund, for Apple II, Atari, Commodore 64/128, IBM PC.

If you’re interested in computer animated greeting cards, check out *CardWare* (Hi Tech Expressions), for Apple II, Atari, Commodore 64/128, IBM PC. The first scene depicts a biplane flying over a village while skywriting your friend’s name.

Other programs to look for: Graphics Expander (*Springboard Software*) for Apple II, Commodore 64/128, IBM PC; Print Shop Graphics Library, Vol. 1, 2, 3 (Brøderbund), for Apple II, Atari, Commodore 64/128, IBM PC; Many Ways to Say I Love You (*CBS Interactive Learning*), for Apple II, Commodore 64/128; The ClickArt Collection (*T/Maker Graphics*), for Macintosh.

Print Your Own
Certificates and Awards

For centuries, scientists dreamed of a remarkable computing machine that would do wonderful things for humanity. I just used that machine to print a “Couch Potato Award” certificate for my brother-in-law.

With the recent arrival of desktop publishing, the computer industry has come to realize that any printed material can be printed with a computer. Because it's so skilled at processing words, the computer is especially good for printing things we want personalized—like certificates, awards, and diplomas. Now along comes Springboard's *Certificate Maker*. It's just about the niftiest little program for home computers since *Print Shop* (see "Create Your Own Greeting Cards, Signs, and Banners").

Certificate Maker is essentially a disk filled with 220 predesigned award templates. Just about every kind of award imaginable is here, from sports and academic achievement to children, religion, and business.

You can print a "Community Service Award" for a member of the first-aid department or a "Spelling Award" for the smartest kid in the class. "The World's Greatest Athlete" will certainly want a certificate attesting to that fact to place on the wall. You can also give a certificate to the local "Computer Whiz Kid."

The program can have practical purposes for teachers, bosses, camp counselors, and presidents of organizations. But mostly, it's fun. Who could resist some of these awards? Procrastination Award, Party Animal, Company Clown, Mr. Know-It-All Award, Most Coffee Breaks Award, Certificate of Wedded Bliss, Greatest Backyard Chef, Big Mouth Award, Best Kisser, and Foot in the Mouth Award.

How would you like to get up on stage and be presented with a “Bad Haircut Award”? A computer program that lets us laugh at ourselves is long overdue.

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Naturally, you can customize the awards for each recipient. There are 24 border designs to choose from (including little hearts and bears) as well as five different type styles for you to write a personal message. It takes about five minutes to set up the certificate on the screen and a few more minutes to print it out. To make your awards look even more professional, three dozen gold foil stickers are included with the program.

Most of the awards have a cute graphic that relates to the topic. The "Fishing Award" shows a guy in a boat fighting with a boot at the end of his line. The "Wine Taster's Certificate" shows a drunken guy with a glass in his hand, falling off a chair. On the "Murphy's Law Degree," the word *Degree* doesn't fit on the certificate.

The only problem with *Certificate Maker* is that it limits creativity. You can't invent your own categories; you can only use the ones on the disk. You can't draw your own graphics or move the graphics from one certificate to another. Adding these features wouldn't have been difficult, but Springboard evidently decided to sacrifice them in order to make the program as simple to use as possible. That may have been the right move. It's certainly better to err in that direction rather than the opposite one, which is what usually happens.

Springboard, for Apple II, Commodore 64/128, IBM PC.

Turn Your Computer into a Camera

If we can draw on a computer screen as if it were an artist's canvas, can we also use it like a photographer's film? Yes. Recently it has become possible to use your computer as a digital imaging system. That is, you can take a real photographic image and translate it into digital form. If that sounds a little technical, think of it like this—you can point a camera at any object in the world and see that object appear on your computer screen.

MacVision is a device that plugs in between the Macintosh modem port and any video source. Most people will use a video camera. If you point the camera at your wife's face, for example, MacVision will scan the image, digitize it, and send it to your computer screen. The whole process takes about five seconds. The image on the screen will not exactly be photographic quality—it'll look something like those computerized photo T-shirts you sometimes see at amusement parks.

So who needs it? You're probably not interested in going into the photo T-shirt business, and you can get a better image by just shooting regular video movies or still pictures of your wife's face.

But the computer lets you do more with that image. You can print it out on your printer, of course, so you have an instant hardcopy. You can retouch the image. MacVision is compatible with *MacPaint* (see "Be a Computer Picasso"), so you can go into that "photo" and change shapes and patterns as you manipulate every pixel on the screen. You can also take the image of your wife's face and send it electronically over phone lines to another computer thousands of miles away.

How could something like MacVision be used? Well, you can shoot a digital photo of something and insert it into a word processing document. That would liven up a book report, term paper, or memo. You can create your own newslet-

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ters, photo greeting cards, photo ID cards, or photo business cards. You can create your own (photo)graphic adventure games. You can shoot a computer photo of yourself, then add a beard, moustache, or new hairstyle to see what you'd look like. You can even see how a nose job would look.

Digital photography is very primitive right now. MacVision is black and white, and it won't shoot moving pictures—they just look like a blur unless you sit very still for those five seconds. But the marriage of computer technology and video technology is exciting and is sure to evolve quickly. Computerized digital photography is an art form about to be born.

Koala Technologies, for Macintosh.

Most of the first generation digitizers are for the Macintosh, but here are two made for other computers: Computer-eyes (Digital Vision), for Apple II, Atari, Commodore 64/128. HippoVision Color Digitizer (Hippopotamus Software), for Atari ST, Amiga.

Print Your Own T-Shirts

Why limit your artistic creativity to a flimsy piece of paper? The computer is a powerful art tool, and *everyone* should be able to admire your work. With the Underware Colorpack they can. Now you can transfer computer art from your screen to your T-shirts.

First, you design your T-shirt image on your computer with a graphics software program (see “Be a Computer Picasso”). Most of the popular software—*MacPaint*, *Dazzle Draw*, *Newsroom*, *PC Paint*, and *Doodle*—will work. If your design includes any text, you’ll have to flip the entire screen left to right to make it into a mirror image. Check to see if your graphics software is capable of doing this.

You’ll need a dot-matrix-type printer, and you’ll have to remove the ribbon you usually use. Underware Colorpack comes with a black ribbon that looks like a regular ribbon, but which contains special ink. Snap the new ribbon into your printer and print out the image on plain white paper.

The Underware package also includes red, green, blue, yellow, and orange felt-tip pens, which you’ll use to add color to your T-shirt design. The computer has made the outline of the design; you just fill it in with color as if you were drawing in a coloring book. The pens contain dye transfer inks.

Next, put the paper face down on your T-shirt and press a hot iron against it for about 30 seconds. Voilà. Your T-shirt is ready. It may not look as slick as a professional job, but you’ll have a fine-looking shirt to show off your personal artwork. Best results are obtained with a bold design (rather than small details), a light-colored shirt, and a material that contains a lot of polyester. You may not like polyester T-shirts, but they accept ink better than 100 percent cotton.

Each Underware Colorpack ribbon should last from 30 to 100 transfers, depending on the complexity of your drawings. Your T-shirt creations are washable and permanent, as long as you don’t use bleach or dry clean them. It’s also possible to

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create images using a digitizer (see “Turn Your Computer into a Camera”). You can even iron your creations on wood, nylon, and synthetic suede to make soft cloth books for children, hand puppets, balsa wood airplanes, or suede keychains.

Diversions, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Create Title Screens for Your Videotapes

A few years ago, the videocassette recorder made it possible for everyday people to screen movies in their homes. Now, camcorders—those little video camera/recorders—are making it possible to shoot movies easily and watch them on TV. The technology is in place for just about anybody to become a filmmaker.

The only things missing are those big, flashy Hollywood title screens. If you're shooting a videotape that you're proud of, you'll want to shout in big letters—PRODUCED BY JOSEPH _____. DIRECTED BY WENDY _____. STARRING TERRY _____. Real movies cry out for jazzy title screens. There are devices that will create titles for your videos, of course. But character generators, as they're called, cost over \$400—probably more than you paid for your VCR to begin with.

Surprise! You can do it on your computer for \$29.95 with a program called *Video Title Editor*. You won't catch Steven Spielberg or Woody Allen using one, but it's inexpensive and it does the job for a beginning filmmaker.

It's basically a graphics program that runs while the computer is connected to the VCR. It contains some canned messages for birthdays, weddings, and anniversaries, as well as title screens specifically for people making home video feature films. There's a movie marquee screen with flashing lights that seem to move around, just like at the real movies. You can put one of the canned messages in the middle of the screen or type in a five-line message yourself. Color is under your control. You can instruct your computer to cycle through all its colors and select what you'd like for the letters and the background. The Apple II version of the program even gives you four different typefaces, so you can experiment.

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When your computerized title screen looks good, you just find the exact spot on your videotape where you want to insert it. It's a fairly simple procedure to hook the computer to the VCR and make a recording of your title screen.

For \$30, *Video Title Editor* doesn't have all the features of a character generator. Your title screens, for instance, have to go before or after your filmed sequences. You can't superimpose the computer graphics over the video images. So if you wanted to add subtitles to your movie, you'd be out of luck. But the program is good for the hobbyist or beginner who wants to experiment with simple, quick, and inexpensive title screens.

Videoware, the company that makes the program, is actually three guys named Mike Siro, Howard Berenbon, and Howard Kahn. Berenbon is the only full-time employee—Kahn is a dentist and Siro is a physician's assistant. This is one of hundreds of companies out there, operating from bedrooms and kitchen tables. *Video Title Editor* is the only program Videoware makes.

Says Howard Berenbon, "There was a need there, and we decided to fill it."

Videoware, for Apple II, Atari, Commodore 64/128, Commodore VIC-20, IBM PC.

Other programs to look for: Video Titler (*Dynacomp*), for Atari; Video Billboard (*Dynacomp*), for Atari.

Write a Poem

The cold, unfeeling hardware of the computer would seem incongruous with the most delicate of all the arts, poetry.

Not necessarily. Learning Well's *Poetry Express* uses the power of the computer to help youngsters from ages 8 to 15 express themselves poetically.

Free-form poetry is probably best composed in the brain and on paper, but other types of poetry can take advantage of the computer. Haiku, for instance, is always three lines and 17 syllables. If you write your haiku incorrectly on *Poetry Express*, the computer will tell you, "Check your syllables. You may have too few."

Similarly, the computer helps in the composition of diamante poetry (which requires the poem to be diamond-shaped), tanka (five lines, 31 syllables), cinquain (five lines, 22 syllables), and sijo (six lines, 7 or 8 syllables). There are even length and rhyming rules when it comes to writing a simple limerick, and these are also included in the program.

Whichever type of poem you want to write, *Poetry Express* will show you a sample poem and the correct rules. You can instruct the computer to demonstrate the proper meter by making musical bleeps. And if you can't find a rhyme for *moon*, you can go to the Rhymefinder section to get some help. Naturally, any poem you write on the computer can be edited indefinitely, saved on a disk, and printed out as a hardcopy.

That may not sound as sensitive and romantic as smooth calligraphy on parchment, but, hey—this is the eighties. As Robert Burns once wrote,

*Then gently scan your brother man,
Still gentler sister woman
Though they may gang a kennin wrang,
To step aside is human.
What's done we partly may compute,
But know not what's resisted.*

Learning Well, for Apple II, Commodore 64/128.

Write a Book

The process of researching, writing, rewriting, editing, typesetting, printing, and binding a book often takes years to complete. But now you can do the whole thing in about 15 minutes with your computer. The resulting work of literature may not make the Pulitzer Prize committee fall off their chairs, but it could be the greatest book in the world to a child between the ages of 4 and 14.

For young children, Scarborough's Build-A-Book series is essentially a preprogrammed story with 25 blank spaces in it. The child or parent is asked a few simple questions about the child—sex, age, name of school, hometown, address, friend's name, pet's name, and so forth. The computer takes these personal facts and weaves them into one of four stories.

"The Mystery of Scented Mountain" is a story about a child hunting down the Nose Monster, who has been stealing the smells of gingerbread men, skunks, and strawberries. Your child is the hero in the story. It starts off at your address, and the Nose Monster lives in a cave near your child's school. The computer uses all the information provided to sprinkle personalized references throughout the story.

After the computer has the necessary facts, it prints "The Mystery of Scented Mountain" on 32 colorfully illustrated pages that come with the program (the illustrations have been cleverly drawn to show a hero who isn't exactly a boy or a girl). A book jacket is also included, so the printed pages can be glued between two hard covers. Your boy or girl then has a real book, which will be read again and again because it's all about you-know-who. If you've got more than one child in the family (or school), Scarborough sells additional sets of book covers and inside pages. There are also other stories—"The Holiday Dragon," "Adventure on Riddle Planet," and "The Greatest Circus Story Ever Told."

Scarborough, for Apple II, Commodore 64/128, IBM PC.

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For older children, Woodbury's PlayWriter series is much like Build-A-Book, but it also teaches simple word processing. Again, the disk contains a preprogrammed story. This time the child does more than just fill in the blanks. A series of questions are asked, and the plot of the story depends on which options are selected. For instance, in "Adventures in Space," the computer asks the child's name and then asks,

I understand that Brian Kors is undertaking an adventure involving interplanetary space travel. Does he get to go because he...

1. is picked by NASA to be an astronaut
2. invented an intergalactic spaceship
3. sneaks on board a NASA flight

The answer will determine how the story branches from that point. Brian will then be asked to name the spaceship and the planet he's going to, indicate how he'll raise the money for the trip, and decide other elements of the story. The child gets to control every twist and turn of the plot. Afterward, he or she can read the story and revise it with the program's built-in word processor. Without even realizing it, children using PlayWriter are learning both word processing and creative writing.

Like Build-A-Book, PlayWriter lets you print out the final story on a printer and bind it into the hard-cover jacket which is supplied with the program. In addition to "Adventures in Space," the PlayWriter series also includes "Tales of Me," "Castles & Creatures," and "Mystery."

What better way could there be for children to learn reading and writing than by writing and reading their own books?

Woodbury, for Apple II, Commodore 64/128, IBM PC.

Publish Your Own Newspaper

*"Brain-dead zombies walk among the living!"
"Shakespeare writes new play from the grave!"*

The tabloids will have to do better than that now that *The Newsroom* is available. This two-disk program gives computer owners the power to create their own newspapers or newsletters, complete with headlines, drawings, captions, and articles. The program is a sophisticated piece of integrated software that incorporates word processing, graphics, and telecommunications. But all that computer jargon is disguised by more user-friendly newspaper terminology. *The Newsroom* starts by displaying icons for the six components that make up a newspaper:

Photo Lab. You can choose from a library of 600 drawings of people, cats, maps, bugs, and other objects, and place them anywhere on the page. These drawings can be altered to your liking, or you can draw your own pictures from scratch. Pictures can even be flopped so they appear backward on the page. Captions can be inserted to explain how the art ties in with the story.

Copy Desk. An easy-to-use word processor lets you write and edit your articles in any of five different typefaces. Text will automatically wrap around any drawings that have been placed in the middle of the story.

Layout Editor. You can art direct the page. Position the stories and artwork anywhere you'd like. If it doesn't look good, rearrange it.

Banners. Top off your front page with a distinctive logo in an extra-large typeface, and add a good-looking border and gray tones.

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Press. Print the entire page on legal-size paper. If you've got a large readership, you may decide to have the finished page photocopied rather than printing it out over and over again.

Wire Service. Hook up your computer over telephone lines with the computers of your "reporters" in the field. They can send in their stories directly to your computer, or you can send the whole page—including artwork—to anyone who's got a computer and modem.

Springboard Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: Clip Art Volume 1 for Newsroom (*Springboard Software*), for Apple II, Commodore 64/128, IBM PC.

When Johann Gutenberg invented movable type in 1449, he never *dreamed* that someday we'd be moving it over telephone lines. Before Gutenberg, publishing meant having a scribe laboriously copy page after page by hand. Books were scarce and expensive. There was little reason for people to learn how to read. Likewise, before the computer, there was little possibility for people to publish. Now, of course, "desktop publishing" is the hottest thing around.

The Newsroom is aimed primarily at young people. But companies are using computers more and more to publish their own newsletters, press releases, reports, invoices, and technical manuals. The combination of a computer and a laser printer is faster, cheaper, and looks nearly as good as professional typesetting. For more sophisticated desktop publishing, look into the following programs:

PageMaker (Aldus Corporation), for Macintosh; MacPublisher (Boston Software), for Macintosh; ReadySetGo (Manhattan Graphics), for Macintosh.

Arts and Crafts for Kids

The scribbling that your children are doing on scraps of paper and the living room wall can also be done on a computer screen. More than that, a few computer scribbles can be turned into a high-tech arts and crafts studio for kids.

Mindscape's *Color Me: The Computer Coloring Kit* is a simplified version of a drawing program like *MacPaint* (see "Be a Computer Picasso"). A child can draw on the screen with different pen thicknesses and make letters in different type sizes. Besides this freehand drawing capability, *Color Me* includes dozens of predrawn graphics, which can be "cut and pasted" alongside the child's original drawings. The graphics feature familiar children's characters such as Rainbow Brite, Hug-A-Bunch, Shirt Tales, and TinkTonk.

The figures are in outline, so they can be printed out on paper and colored in like any other coloring book. An optional *Color Me* Supply Box includes buttons, colored paper, adhesive-backed paper (for making stickers), and a binder so that children can put together their own coloring books.

Springboard's *Mask Parade* is a similar program that focuses on making paper costume items that kids can create, print out, and wear. The program includes outlines of masks, badges, jewelry, ties, hairpieces, glasses, funny feet, hats, and name tags. Kids can select from different eyes, noses, and mouths, or they can draw a face of their own. Then they print them out, color them in, and put them on. *Mask Parade* is great for children's parties, Halloween, and Valentine's Day. It's recommended for 4-12 year-olds.

Mindscape, for Apple II, Atari, Commodore 64/128, IBM PC.

Springboard, for Apple II, IBM PC.

Other programs to look for: *Stickers (Springboard)*, for Apple II, Commodore 64/128, IBM PC.

CHAPTER 11

The Religious Computer

Learn the Bible

Picture this: Your spaceship has been caught in a time warp. You get out and find yourself in Palestine during the first century. Your assignment is to find various characters from the Bible. Knowledge of Bible history and geography will help you accomplish your mission.

That's the plot of *Bible Trip*, part of the Bible Fun series from Smoky Mountain Software. This isn't some fringe software company out there making specialty programs. Religious computer software is a big business, with dozens of companies supplying all kinds of programs. Smoky Mountain is one of the larger operations. The company makes over a dozen programs aimed at helping children and adults gain a greater understanding of the Bible and have fun at the same time. Here are a few of them:

Scrambled Verses. The computer presents you with random lines of text from Bible verses, poetry, and other Christian literature. You have to rearrange them and put them in the correct order. Hi-res graphics and computerized hymns are also included.

Bible Mates. You've got to guess which biblical characters were married to whom. The computer keeps score.

New Testament Jobs. Win a chariot race by using your knowledge of the occupations of biblical characters (for example, "Cain was a farmer. True or False?").

The Garden, Joseph, the Bush. Stories of people in the Garden of Eden and after are told with computer graphics, but they're all in the wrong order. You have to put the pictures in the correct sequence.

Smoky Mountain Software, for Commodore 64/128.

If you're interested in learning the Bible and you don't want to play any games, you should check out Omega Software's *Scripture Scanner*. The entire Bible (King James Version)

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has been put on six disks, and you can read it off your screen. The program also uses the capabilities of the computer to make Bible study easier. You can insert text from the Bible into your own word processing files, split the screen in half to read two passages at the same time, and scan the scriptures to search for keywords or phrases. Omega claims, "The personal computer now gives us complete, instant access to the eternal, living, truths of God's Word."

Omega Software, for IBM PC.

As long as you're using the computer to learn the Bible, why not use it to run your church? *Compuchurch*, from MTS, is a program that tracks contributions and donations, and maintains a database on members of the church. "We're in operation in over 16 denominations," claims MTS. It's made for Commodore 128, CP/M, and IBM PC. And UHL Research Associates sells a Commodore 64/128 program called *Sunday School Master Writer*, which keeps track of the attendance records of up to 800 people.

Other programs to look for: New Testament Concordance (*Midwest Software*), for Apple II, Commodore 64/128, IBM PC; Biblesoft (*Hi-Tech Ministries*), for Apple II, Atari, Commodore 64/128, IBM PC, Macintosh; Knowledge Bible (*Little David Enterprises*), for Commodore 64/128; Jesus the Son of God (*Lewis Enterprises*), for Macintosh; PQ-The Party Quiz Game, Bible Edition (*Suncom*), for Apple II, Atari, Commodore 64/128; THE WORD Processor (*Bible Research Systems*), for Apple II, Commodore 64/128, CP/M, IBM PC, TRS-80.

Study for Your Bar Mitzvah

*Math programs, spelling programs, typing programs—
just about every software manufacturer has one these
days. But where can you find quality Judaic software?*

So say the ads for Davka, which makes software aimed at Jewish computer owners. The company was formed in 1983 by Rabbi Irving Rosenbaum.

In Judaism, a young boy passes into manhood at the age of 13 by reciting and singing passages from the Torah. Students often study for years in preparation for the big day. Davka's *Bar Mitzvah Compu-Tutor* is the first and only computer program designed to help a student rehearse for this ceremony.

The program contains the full text of the Haftorah, using the Ashkenazic or Sephardic pronunciations. Students can customize their lessons by including their English and Hebrew names. An English translation of all the text is provided. You can stop the computer at any time and repeat passages that are giving you trouble. Traditional music plays along with the text, and there is even a "sing along with Mitch" bouncing ball. Girls can also use the program to study for their bath mitzvahs.

Here are a few of Davka's other programs:

Bible Baseball. Answer trivia questions about the books of the Old Testament in order to get singles, doubles, triples, and home runs. You might just get a single if you know the answer to this:

God first called to Moses from a _____

A. Bolt of lightning

B. Mountain top

C. Burning bush

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Triples and home runs come from the harder questions, like this:

When Moses sent 12 spies to Canaan, they stayed there

-
- A. Four days
 - B. Forty days
 - C. Until they died

Jewish Compu-Chef. A cookbook program containing more than 150 kosher recipes, including chile, beef teriyaki, and biscuit tortoni.

Dreidel Drama. A game in which the computer spins an electronic dreidel (sort of like a top), and up to five players can bet on which side it will land on.

The Hanukkah Computer Coloring Book. Twenty-five traditional Hanukkah scenes can be electronically colored in, saved on disk, and recolored. Sixteen colors are available.

Catch a Hamantash. Grab the falling hamantash (a type of pastry) before it splatters to the ground; then place it in the oven to be baked. An action game.

All About Passover. Learn the biblical background and present-day observances of the Passover holiday. Included are animated graphics of the burning bush and the parting of the Red Sea. A quiz at the end of the program asks questions like this:

Who saw the burning bush?

- A. Moses
- B. Aaron
- C. Charlton Heston

The Davka folks obviously have a good sense of humor as well as a devotion to promoting biblical and Hebrew learning.

Davka, for Apple II, Atari.

Other Davka titles: How to Conduct a Seder, Hebrew Phrasebook, Crumb Eater, Purimaze, Fuzzball, Samson and Delilah, Compu-Dikduk, and Hebrew Writer (a word processor).

Pray in the Direction of Mecca

At five specific times every day, 550 million people around the world kneel in the direction of Mecca and pray. This city in Saudi Arabia is the birthplace of Mohammed and the holiest city of all Islam. But what about the Moslems traveling on business or vacation? How do they know which direction to face? If they've crossed four time zones, how do they know exactly when to pray?

A Texas Lebanese Christian named George Shrimme has the answer—the Electronic Prayer Guide. This clock-size device is helping Moslems all over the world know where and when to pray. "I am not a Moslem myself, but I come from that area of the world and am familiar with what the Moslems do," says Shrimme. "At the same time, I'm a computer engineer. I guess I put the two together."

When the time for prayer arrives, Shrimme's EPG gives off three pleasant, audible beeps at 15-second intervals. The name of the appropriate prayer appears (in Arabic) on the liquid crystal display, as well as the opening verses of the Call to Prayer (Azan). The EPG will also compute and display all the times of prayer during the day, along with the names of the prayers.

The time of prayer and direction faced depends, of course, on where in the world you are located (and where in the sky the sun is located). Two hundred cities have been programmed into the EPG's memory. These can be scanned at the push of a button. When the correct city is found, the time and date will be automatically calculated. Pressing another button causes an arrow to point north, and a flashing marker indicates the direction (the Qibla) of Mecca. It is possible for a Moslem believer to travel virtually anywhere in the world and still stay within the rules of the faith.

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George Shrimé's Electronic Prayer Guide is a self-contained, microprocessor-based box. The whole box sells for about \$400, and the program that runs it is not presently available on disk for personal computers. However, Shrimé developed the program in BASIC on an Apple computer and translated it into assembly language. He says the program code can easily be copied from paper and typed into your computer. If you are interested in purchasing a copy of the program, write directly to Shrimé at his company—Micro Star. The address is in the appendix.



CHAPTER 12



Up in the Sky

Look At the Universe

In the larger scheme of things, you and your computer and your house and your hometown and the United States and Earth itself are like an insignificant speck of dust floating in the vast universe. Don't take it personally. That's just the way it is. The sky is filled with zillions of stars and planets, and perhaps there are creatures living on them who go to work each day, put on their pants one leg at a time, and go to the movies on Saturday night. Who knows?

Looking up at the dots in the sky at night gives you a beautiful view, but it doesn't tell you much about what's up there. There's a fascinating computer program that makes it possible to locate constellations, stars, and planets, and gives you a look at the universe as if you were in the most powerful observatory in the world. *TellStar II* is advanced enough to be used by professional astronomers, yet simple enough to be used by children.

After loading the program, you enter the exact latitude and longitude of your location—it can be anywhere on Earth. The instruction manual or any atlas will help you find the exact degrees, minutes, and seconds of where you are. Then you're asked for the month, day, year, and whether or not you're on daylight-saving time. The computer will make the necessary calculations and give you an exact graphic representation of what the heavens look like from your particular vantage point at that moment in time. If you decide to change the date or location coordinates, the computer will recalculate and give you a different view. For instance, you can see what the night sky looks like to the people in Paris, London, or Newark, New Jersey. You can pick a date anytime from the year 0 to the year A.D. 3000. It's really amazing.

And that's not all *TellStar* can do. You can use your keyboard like a telescope and swing the view back and forth across the sky. You can look at the horizon, or imagine that you're lying on your back and looking straight up in the air. If

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you're wondering where the North Star is, the program will highlight it and tell you its precise location. If you see an interesting star, but don't know what it is, just position the cursor over it, and the computer will identify it for you. The computer will also be happy to tell you the names of all the constellations as well as their phases, astronomical coordinates, compass headings in relation to where you are, and the time and location of their risings and settings. You can even print out a copy of anything on the screen.

TellStar won't help you track down any E.T.'s or Starmen, but when they *do* land in the backyard, it'll help you figure out where they came from.

Spectrum Holobyte, for Apple II, IBM PC, Macintosh 512K.

Find Halley's Comet

One night in 240 B.C., somebody in China looked up and caught a glimpse of a brilliant object shooting across the sky. It disappeared, but came back 76 years later. It also came back 76 years after that, and every 76 years, like clockwork. Halley's visits were associated with wars and disasters in ancient times. You can imagine how a primitive culture would react to this sudden surprise in the sky. Today, we study it as a scientific event. Halley, of course, has left us and won't return for another 76 years. But you can look at it anytime you'd like on your computer screen.

Eric Burgess is a skywatcher. He's the founder of the British Interplanetary Society, a space flight advisor to NASA, and author of 14 books on space. Even more impressive, he was the technical advisor for the James Bond film *Moonraker*. Burgess is also a programmer, and his *Halley's Comet on Your Home Computer* is a must-have program for anyone interested in the comet.

The program starts by asking you to enter your location (anywhere on Earth), the exact time, and the date. The computer will calculate the position of the comet and help you locate it in the sky. If it's not above the horizon, you'll be told when it will rise and set at your particular location. It will also tell you when the sky will become dark enough to see Halley, and when the rising sun will make it too light to see it in the morning.

If you're a casual observer, that's all you'd need to be able to tell your grandchildren you saw Halley's comet "back in 1986." For real Halley fans, the program does much more. It traces Halley's path through the Solar System for every visit since A.D. 1000. It calculates the size and location of the comet's tail and shows which planets are nearby. It determines how far the comet is from the sun and Earth at any point in time. You can tell if the moon is in a phase that will make it difficult to observe Halley, and your screen will display its

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daytime path, even though you won't be able to actually see it in the sunny sky.

Halley's Comet on Your Home Computer also contains several screens of text about the history of the comet as well as a list of dates when Halley "apparitions" were recorded and by whom. Maybe 76 years from now, your name will be on the list.

S & T Software, for Apple II, Atari, Commodore 64/128, TI Professional.

Other programs to look for: Learn About the Solar System and Halley's Comet (*Millett Software*), for Macintosh; The Halley Project (*Mindscape*), for Apple II, Atari, IBM PC; Halley (*StarSoft*), for IBM PC; Halley Patrol (*Urania Systems*), for Atari; Cometwatch (*Zephyr Systems*), for Apple II, Commodore 64/128, IBM PC.

More Astronomical Software

The arrival of Halley's comet sparked a tremendous outpouring of astronomical software packages. Here are just a few you might be interested in:

Sky Lab. Helps children in grades 6–8 to learn about the earth's rotation and revolution within the Solar System. (MECC, for Apple II.)

MacStronomy. Displays a celestial map with the stars, the moon, and the planets as well as the path of Halley's comet. (Alphabyte Software, for Macintosh.)

Sky Travel. This "window to the sky" shows you what the sky looked like within a span of 20,000 years. (Commodore, for Commodore 64/128.)

Astrostell. Teaches you about 88 constellations. (Zephyr Services, for Apple II, IBM PC.)

Starchart. Displays data on 1476 stars. (Visionary Software, for Apple II, IBM.)

Eclipse Map. Shows you the best spot in the world to view a solar eclipse. (Charles Kluepfel, for Apple II, Commodore 64/128.)

Want more? Send \$1.00 to the Astronomical Society of the Pacific, 1290 24th Avenue, San Francisco CA 94122. They'll send you a list of more than 40 astronomical software programs.

Make a Paper Airplane

Paper airplane enthusiasts have always been ridiculed. Ping-Pong players command respect. Water polo players and bicycle racers with funny hats win Olympic medals. It's considered very dignified to play golf. But the folding and flying of paper airplanes is considered frivolous, a waste of time. Well, perhaps things will change now that we can use our extremely serious computers to make paper airplanes.

On December 12, 1966, the *New York Times* ran an ad for *Scientific American's* "1st International Paper Airplane Competition." The magazine's editors had realized that designs for *real* airplanes had actually been invented years earlier by little boys tossing folded paper out of windows, so they invited all their readers to send in their best efforts.

Almost immediately, planes flew into the offices of *Scientific American*. In all, there were 11,851 entries from 28 nations around the world (750 from Japan alone). One was 11 feet long; another was 0.00003 inch. Some looked like traditional planes; others looked like flying darts or a pair of barbells. Some were submitted by aeronautics experts; others were from schoolchildren who had been goofing off in class.

All the planes were test-flown in the hallways of the magazine. The most promising designs were then analyzed in a wind tunnel at Princeton. A panel of aeronautics experts evaluated the best planes. Seven winners were selected in four categories: duration aloft, distance flown, aerobatics, and origami (decorative paper folding). The contest has spawned a successful book, films, doctoral thesis, and now...software.

The Great International Paper Airplane Construction Set contains over a dozen plane designs, most of them from the *Scientific American* contest. With these full-page designs on a disk, you can simply print them out on your printer, fold them along the dotted lines, and give them a toss. Amateur plane designers can personalize their creations. There's a library of aviation graphics within the program that you can print out on

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your plane: landing gears, bombs, stars, stripes, even flight attendants. Any of these can be edited to your liking, or you can invent your own fuselage embellishments. Detailed folding instructions are included, along with hints for creating original designs.

Don't worry about wasting your computer's valuable time with something as frivolous as paper airplanes. A well-constructed paper airplane design is a thing of beauty. As H. G. G. Herklots said in his 1931 essay *Paper Aeroplanes*, "A little while ago it was a sheet of notepaper, but now it glides like the fairest of white birds."

Simon & Schuster, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Other programs to look for: *The Toy Shop (Brøderbund)*, for Apple II, Commodore 64/128, IBM PC, and Macintosh, lets you customize and print out mechanical toys on paper. Included in the program are templates for a balloon-powered jet dragster, catapult, sundial, and 17 other toys that actually work.

Design a Space Shuttle

Perhaps the only positive thing that can be said about the January 1986 space shuttle disaster is that it renewed our respect for the power and danger of technology. Before the Challenger explosion, we had become so used to manned space flight that we took safe launchings and landings for granted. Actually, it's a tremendous achievement to shoot human beings into space and bring them home safely.

HesWare's *Project: Space Station* is a shuttle simulation that could teach the folks at NASA a thing or two. This is no flight simulator. Flying is just a small part of the job. You're the mission coordinator here. You've got to make a budget, select your crew and equipment, plan the mission, choose the research projects you'll be conducting in space, and even design the spacecraft itself. Each piece of equipment and astronaut you choose eats into your ten billion dollar budget. And you ain't going nowhere until you get approval for your flight plan.

This is a complete simulation. In choosing your crew, you've got to select six people from a pool of 32 potential astronauts. Each one has a different personality and level of expertise. Mac Stevens, for instance, is rated as very competent, but not very imaginative. Joe Church is more charismatic and less dependable. For each candidate, you'll also learn the last book read and a favorite quote, and you'll get an evaluation by other astronauts. (You probably won't be willing to trust your mission to the guy who says, "It's five o'clock. Time to party.")

When you finally get the A-OK for launch, you've got to steer skillfully, conduct your experiments in space, and make a perfect landing.

Like all ambitious projects, *Project: Space Station* has a goal. Is it to explore new galaxies and worlds? Is it to boldly

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go where no human has gone before? Is it to reach a new dimension of space and time? Is it to take a small step for man and a giant leap for mankind?

No. No. No. No. None of that 1960s idealistic stuff. The goal is to make the shuttle a commercial success. This is a real-life simulation for the 1980s. Only in America.

HesWare, for Apple II, Commodore 64/128.

Other programs to look for: Orbiter (*Spectrum Hologram*), for IBM PC, Macintosh; Space Shuttle: A Journey into Space (*Activision*), for Apple II, Atari, Commodore 64/128; Shuttle Designer (*Simpletec*), for Commodore 64/128.

CHAPTER 13

Pick Sunday's NFL Winners on Saturday

Amateur gamblers who put a few bucks on pro football games often make their decisions based on tips, hunches, or loyalties more than anything else. If you're very lucky, that's a great way to bet. If you're like most of us, it's a great way to lose money. If you bet on the Dolphins because you like their cheerleaders, you can't get too upset when you're emptying out your wallet on Monday morning.

Before he created *Pro Sports Stats*, Steven Silverman was president of a securities and commodities brokerage firm. He got the idea for the program when he realized that investing money is very similar to betting on football games—winners make intelligent decisions; losers rely on guesswork. Here's Silverman's formula for consistently winning investors and football handicappers—"Accumulate all the pertinent information, put it into a meaningful form, computerize it, and let the computer find historical patterns that are likely to repeat in the future."

Pro Sports Stats doesn't pick the winner of any one game. Instead, it helps you look at more than a decade of statistics to find out how particular teams play under particular conditions, so you can "beat the spread." The spread is the odds maker's way of making a game even. If one team is believed to be stronger than its opponent, points will be added to the weaker team's score to even them up. For the gambler, it's not enough to pick the winning team—you're betting on whether or not the stronger team will win by enough points.

The program contains the complete history of every NFL game since 1970. Many factors have been incorporated into the system—every team's won/lost record, the coaches, home games/away games, playing surface, and, of course, each team's record against the spread. So if you're a Pittsburgh Steelers fan, you can find out how they've done overall

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against the spread, after two consecutive losses against the spread, when they were playing at home, or when they've been four-point favorites. You can also find out the answers to complicated questions like these:

- What's New England's record against the spread from 1980 through 1985 when they are five-point (or more) favorites and are playing at home?
- From 1970–1986, how often does the home team underdog getting eight or more points beat the spread if they have lost their last two games?

With this information, you can base your betting decisions on past history and hard facts instead of tips and hunches.

Silverman says he's sold *Pro Sports Stats* to more than a hundred professional handicappers. When I asked him how accurate they've been while using it, he said, "As far as giving percentages, that's phony-baloney. Everybody can use it differently. I had one person who told me he won nine out of ten weeks last season. But it all depends on how you interpret the data."

And how does Silverman interpret the data?

"I don't bet," he said.

Eastern Computer Consulting, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: PDS Sports Pro Football/Pro Basketball Handicapping System (*PDS Sports*), for Apple II, Atari, Commodore 64/128, IBM PC, Macintosh, TRS-80; Pick 'Em (*Marathon Software*), for Apple II, IBM PC, TRS-80; Scorecast (*Tradewind Software*), for IBM PC; NBA Handicapper (*Dynacomp*), for Apple II, Atari, Commodore 64/128.

Pick a Winner at the Race Track

Ron Jones doesn't get out to the track much anymore. He's too busy creating computer programs that handicap horse races, harness races, and dog races.

"Two weeks ago a guy called me up and said he made \$9,200 the first time he went to the dog track using my program," says Jones. "In 13 races he hit 11 trifectas, 9 exactas, and 10 quinellas. I told him not to expect this forever. Everybody has good days and bad days."

Serious handicappers who want to evaluate every possible factor in a race are turning to the computer more and more to do the number crunching. The immortal "Professor" Jones is the dean of gambling computerists. Folks started calling him Professor when he taught high school in Boise a few years back. "It just kind of got hung on me," he says.

Most students put themselves through college by cooking burgers or tutoring. Ron Jones earned his tuition by handicapping races at Santa Anita. He learned everything he knows from an old man who made his living at the race track. "He's gotta be dead by now," figures Jones. "He was almost dead when I knew him."

After college, the Professor bought a used Radio Shack computer and translated the old man's handicapping theory into software. A tiny ad in a magazine generated \$400 worth of orders. "I said, 'This is great. I'm a big winner.'" This year, the Prof expects to do \$300,000 in gross sales.

The Master Handicapper Series asks 23 questions about each horse and tracks 30 variables that might influence a race. The questions concern condition of the track, length of the race, gender of the horse, days since its last race, jockey, past performance, and other information found in *The Daily Racing Form*. It takes about 15 minutes to "run" a race through the computer.

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"We're offering things like multiple regression analysis and factor reweighting. The programs actually get smarter the more races you put into them," claims Jones. "It's not a 'system.' It's just good, hard handicapping."

As far as accuracy goes, Professor Jones claims that skilled handicappers using the program make between 25 and 60 cents on each dollar they bet. His top programs boast a 45 to 49 percent win rate. "Those are good numbers to professional handicappers," he says. "They're not numbers the miracle people promise."

Jones's programs don't come cheap. His top of the line Ultra series sells for \$400, so most of the people who buy it are serious about their gambling. A third of the customers are professional handicappers, according to Jones, and another third go to the track three times a week or more.

The last third, of course, are the hacks, the occasional gamblers. Professor Jones says that even they can make smarter bets using his programs: "I have casual gamblers who are more excited now than they've ever been," he says. "Their wives call me up saying, 'You saved our family. Our child can go to college now.' When I ask them how much their husbands are winning at the track, they say, 'Nothing, but he's finally breaking even!'"

Professor Jones, for Apple II, Commodore 64/128, CP/M, IBM PC, Macintosh, TRS-80.

Other programs to look for: The Handicapper (*Federal Hill Software*), for Apple II, Commodore 64/128, IBM PC, TI-99/4A, TRS-80; Greyhound Analysis (*Software Exchange*), for Apple II, Atari, Commodore 64/128, Commodore VIC-20, IBM PC, TI-99/4A, TRS-80; Alsoft Race Analysis System (*Alsoft Software*), for Commodore 64/128; Trainer and Jockey Statistics System (*PDS Sports*), for Apple II, Atari, Commodore 64/128, IBM PC, Macintosh, TRS-80. Most of these companies make programs for handicapping thoroughbred, harness, and greyhound races.

Beat the Odds at Blackjack

For hotshot blackjack players, superstar status doesn't come from winning a lot of money. It comes from getting thrown out of lots of casinos for winning a lot of money. And Ken Uston has been kicked out of more casinos than anybody. Uston is a card counter—by carefully memorizing which cards have come into play, he can calculate which ones are likely to be still in the deck. This gives the player a definite advantage. *Ken Uston's Professional Blackjack* teaches these techniques and lets you practice playing blackjack without having to risk a cent.

The program has four sections: Basic Strategy, Plus/Minus Count, Advanced Plus/Minus Count, and Advanced Point Count. Most players will familiarize themselves with Basic Strategy first. The computer will randomly deal you and the dealer a pair of cards, with one of the dealer's cards showing. You'll be told exactly what you should do in each situation, then you can practice on any of your weak areas. The computer will also shoot cards at you flash card-style to test how well you can keep track of the count.

The rules of blackjack change slightly in different casinos. Some houses allow players to split aces; others don't. Some houses use one deck of cards; others will use as many as four. The program takes all of this into account. After you complete your basic training, the computer will ask you to choose Las Vegas, Reno, or Atlantic City. There will be a list of key casinos in each area, and the rules for more than 70 are in the program. You'll choose one of them (or invent your own rules), enter the system you're using, the size of your stake, and the value of each chip. You'll see the house rules jump to your screen, and you'll decide if you'd like to play by yourself or with up to six other players.

The computer shuffles the cards with a realistic riffle sound and zips them out onto the green table faster than any

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human could possibly deal cards. You can bet as many as nine of your chips (any more would signal that you might be a card counter). Pressing the 1 key asks the dealer for a hit; pressing the 2 key signals that you'll stand. The amount of cash you have and your current bet are displayed on the screen. You can also determine your correct play by referring to a color-coded box. The computer will tell you if you make an incorrect play. At any time, you can see a running card count, a discard deck total, or a statistical evaluation.

Not everybody can be a card counter. It requires a good memory and a mathematical mind. But even if you don't use it to learn card counting, *Ken Uston's Professional Blackjack* is good blackjack practice. It just might help you make some important quick decisions when you get into a real casino.

Screenplay, for Apple II, Atari, Commodore 64/128, IBM PC.

Other programs to look for: MacVegas (*Videx*), for Macintosh; Casino Blackjack Counter/Tutor (*Manhattan Software*), for IBM PC; Video Vegas (*Baudville*), for Amiga, Apple II, Atari, Atari ST, Commodore 64/128, IBM PC, Macintosh; Win at Blackjack (*MicroScope Systems*), for Commodore 64/128, VIC-20.

Pick Your Lottery Numbers

It seems pretty silly—using a computer to pick your lottery numbers for you. It's a zillion-to-one shot to win and it's all luck, right? Why would computers pick better numbers than human beings?

Guy Fusco thinks they can. Of course, he's only human. But he's also the creator of *Lotto Picker Plus*.

Human beings, according to Fusco, find it difficult to pick numbers randomly. We pick our birthdays. We pick our mother's birthdays. We refuse to pick the number 13, or we make sure that we don't pick two consecutive numbers. We play our hunches.

The State Lottery Commission doesn't care about your mother's birthday. Assuming the lottery is on the level, the winning numbers are *completely* random. Guy Fusco claims that if you pick numbers that are biased in any way, it statistically *reduces* your chances of winning.

"What you're doing is eliminating tens of thousands of combinations," he says. "If the pure odds are 8 million-to-one, you could be raising that to 12 million by your personal bias." (These are his ideas about statistics, folks. We're just reporting them.)

Your computer, of course, doesn't care about your mom's birthday either. It has a random number generator built into it, so it picks numbers exactly the same way the real lottery does. That doesn't mean it *improves* your odds of winning, but at least it doesn't make them worse.

Oddly, Fusco has found that many people want to have the option of playing their hunches, their birthdays, or whatever numbers they think are hot. "After a year of trying to convince people that it only hurts their chances, we decided to give the public what it wants," he says. The new version of *Lotto Picker Plus* allows you to give weight to your favorite numbers, if you choose.

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In other words, the program has been “improved” in order to make it less effective.

Just about every state in the United States and Canada has some form of lottery. *Lotto Picker Plus* can be used for all the lottery games in North America. You can also customize it easily for *any* type of lottery, in case a new one is started or changes are made in the rules of your present one.

So far, none of the thousand or so people who have purchased *Lotto Picker* have hit it big. “I’m waiting for that one person to win a million dollars. Then you’ll see the full-page ads,” says Fusco. “That’s what we’re waiting for.”

Fusco claims to have won jackpots of \$200 with *Lotto Picker*. But in general, he doesn’t play lottery games because of the astronomical odds against winning. “I’d rather go to the race track and take my chances on an eight-to-one shot,” he says.

A thought to consider—If an Apple computer picks your lottery numbers and you win 50 million bucks, can Apple rightfully claim part of the prize?

GE Ridge Services, for Apple II, Commodore 64/128, IBM PC, TI-99/4A.

Other programs to look for: Lottery 64 (*Superior Micro Systems*), for Commodore 64/128.

Start Your Own Betting Pool

"The Oddsmaker is designed for entertainment use only."

Yeah, sure.

When you think about it, betting on the Super Bowl, heavyweight championship, or the day a baby will be born can be entertaining, can't it? *The Oddsmaker* makes it possible for anybody to set up a parimutuel betting pool.

Say you're having the gang over to watch the Academy Awards tonight. You know it will probably be the most boring evening of your life, depending on what Cher is wearing. Why not make it a little interesting by forming an Oscar pool? Everybody puts a few dollars on who they predict will win each Oscar. People always get more excited if they can get involved with the competition emotionally.

The Oddsmaker accepts bets, prints tickets, and calculates the odds and payouts automatically. It's sort of a spreadsheet for gamblers. After all the bets are in, the computer will show how much has been bet on Meryl Streep to take Best Actress and what the odds are that she will win. If you'd like, you can instruct the computer to take a house cut before any payouts, so you can pay for the beer and chips.

Think of it as your electronic bookie.

CZ Software, for Apple II, Commodore 64/128, IBM PC.

Other programs to look for: *The Oddsmaker (Dyna-comp), for Apple II, Commodore 64/128, IBM PC.*

CHAPTER 14

Miscellaneous

Plug Your Wristwatch into Your Computer

Chester Gould never lived to see a wristwatch that could be plugged into a computer. Gould died a month before Seiko introduced its PC Datagraph. Somehow it seems fitting that the computer wristwatch wouldn't be invented until the creator of Dick Tracy had passed away.

Gould gave Tracy his famous wristradio, and he probably would have strapped this new electronic gizmo onto Tracy's wrist in a minute. It looks pretty much like a regular watch, but it does a lot more. The watch stores 2K (2000 characters) of memory. Not much, compared with today's 512K computers. But, remember, it doesn't sit on your desk—it weighs two ounces and it's strapped to your arm.

The face of the Seiko RC-4000 has a 24-character readout and will store a list of phone numbers, addresses, your daily schedule of appointments, your grocery list, or maybe some foreign language phrases you need to keep “on hand” while traveling. Dick Tracy might have used one to keep track of his court appearances so that Pruneface, Gravel Gertie, and other assorted creeps would stay safely locked behind bars.

Did you forget your relatives' birthdays or anniversaries this year? You can program reminders into the computer watch up to a *year* in advance, and it will beep when the time comes to tell you to call the folks. Nobody can ever say that you're thoughtless again. For absent-minded people, this may be the greatest thing since lost and found departments. It won't be long before students are hiding electronic crib sheets on their wrists—and teachers have to remove all watches before examinations.

The best thing about the Seiko watch is that you can hook it directly to a computer with a cable that attaches to the serial port. You can, for instance, type your daily schedule into your computer and then transmit that information to the watch so you can look at it during the day.

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I know what you're thinking—who needs a computer built into a watch? Most of us get along fine with our paper calendars and scraps of paper. The people who buy computer watches are probably the tekkies, the status seekers, and the guys who want to be the first on their block with the latest electronic gadget.

Oh, by the way, computer watches also keep excellent time.

Seiko, for Apple II, Commodore 64/128, IBM PC.

Find Out What
Time It Is Anywhere
in the World

Anyone who's done a lot of traveling knows how confusing it is to figure out what time it is. Do you gain or lose hours when you travel east? Should you call California from London early in the morning or late at night? If the Super Bowl is being played in Miami at 1:00 p.m., when can you see it in Chicago? What time do the polls close on the West Coast? What's the International Date Line, anyway?

World Clock (a section of Practicorp's *64 Pak*) is a simple program that puts all these questions to rest. It plots a high-resolution graphic map of the world with various big cities indicated, along with their times. When you enter your local time, the computer recalculates all the other times and displays them, so you can see what time it is all over the world at a glance. All times are displayed in the 24-hour format, and in the United States, corrections are made for daylight-saving time and a.m. and p.m. Also included in *64 Pak* is *Perpetual Calendar*, which tells you what day of the week any date falls on during the years 0 through A.D. 9999.

Practicorp International, for Commodore 64/128.

Other programs to look for: Micro Travel Companion (Concept Development Associates), for Apple II, IBM PC.

Find Out How Many Miles You Are from Anywhere

London is 212 miles from Paris, 3451 miles from New York, and 3906 miles from Greensboro, North Carolina. How do I know? I looked it up in the *Concepts Computerized Atlas*, from Software Concepts. The program will tell you how far you are from just about any city on the planet (2500 of them, anyway). It will also tell you each city's population, latitude, and longitude, and it will even draw a map of the area right on your screen.

Almanacs and atlases aren't particularly exciting. They don't make *People* magazine or "Entertainment Tonight." They sit on the shelf gathering dust until you suddenly need to know the capital of Zimbabwe. But the new breed of computerized reference books that are coming out may shake things up a little. Instead of dragging out a ten-pound book and searching through thousands of pages, you can pop a three-inch disk into your computer and let it do the searching for you.

Admittedly, computerized reference programs don't yet match the bulk of information in books. Hippopotamus Software's *Hippo Computer Almanac* contains just 35,000 facts, compared to over a million in *The 1986 World Almanac and Book of Facts*. But the *Hippo Almanac* excels at *interactive* information. You can instruct it to convert 23 gallons into liters, or 90,067 meters into feet. Your computer will have the answer in seconds. This computerized almanac can translate common words into more than a dozen languages. It can tell you what time it is in Tokyo right now, or how many miles you are from Newark, New Jersey. It will convert units of time, mass, distance, volume, or energy for you.

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You can ask *Hippo* a question like, "What is the monthly payment on a \$45,000, 12 percent, 30-year loan?" Two seconds later—\$411. There isn't a book in the world that can do that.

Unlike most computer programs, *Hippo Computer Almanac* understands English sentences. If you type, "What is the zip code for Duluth?" you get the answer. That's a lot easier than looking up Duluth in the table of contents, finding the page, and then finding the information.

Hippo understands English, but it's not a genius. Here's what I went through to get the answer to a simple question:

Me: How many calories in a Coke?

Hippo: That's not a valid conversion.

Me: How many calories in a soda?

Hippo: There are 12 calories in one average soda cracker.

Me: How many calories in a cola?

Hippo: There are 94 calories in one cup of cola drinks.

They may not replace the paper almanacs yet, but these programs show the potential for using the computer as a reference tool.

Software Concepts, for Apple II, IBM PC, Macintosh.

Hippopotamus Software, for Atari ST, Macintosh.

Other programs to look for: The Millennium Electronic Almanac (*Avant-Garde*), for Apple II, IBM PC.

It's no gag—funeral parlors can use computers to streamline their operations, just like any other business.

In the last few years, software packages that are specifically made for individual types of companies have started coming out. There are programs that help doctors and dentists run their offices. There are programs geared toward video store owners. There are programs, not only for funeral directors, but even for auto body shops, junk yards, and pig farmers.

In the computer industry, this is called vertical software—programs that have been customized for specific purposes. Every business has its own needs. Doctors need to keep track of upcoming appointments. Sales reps need to keep track of sales leads. Pig farmers need to keep track of...well, pigs. Vertical software is designed to accomplish a particular task that is unique to a certain profession. It came about because people realized that the software out there solved only general problems; it didn't solve their particular problem.

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If you think computers can be useful only to accountants, here are a few of the vertical software programs available for various professions:

Video Cash Register. Helps a video store keep track of tapes out for rental and members of the video club. (Custom Computer Software.)

Hollander Computer System. For the salvage yard boss who wants to know instantly which parts are in stock, their condition, location, and selling price. (Hollander Publishing, for IBM PC.)

OR-D Medical/Dental Management System. Manages a doctor's patient recall, progress reports, billing statements, insurance forms, prescriptions, referrals, and other paperwork. (OR-D Systems, for Apple II, AT&T, IBM PC, Macintosh.)

The Apparel Manager. Helps fashion apparel retailers write purchase orders, print up price tags, and determine the proper order levels. (Retail Solutions, for IBM PC.)

Real Estate Professional. A calendar/appointment schedule program that also helps a real estate office do expense reports and correspondence. (National Microware, for IBM PC.)

H.E.L.P. Health clubs and athletic trainers can design fitness programs by telling the computer the patient's age, sex, body fat, stress level, lifestyle, and diet. (CMA Micro Computer, for Apple II.)

Auto Body Computer. Auto body shops are using this package to help estimate job costing, write damage reports, and assist with their finances. (Automotive Computer Group, for IBM PC.)

There are hundreds more for every business imaginable. Check for ads and articles in your industry's trade magazines.

Programs for Teachers

There was a time when students would sneak an apple onto their teachers' desks to show respect and win favor. Nowadays, teachers are putting their *own* Apples on their desks...and IBMs, Commodores, and Radio Shacks.

Sam Miller teaches science at Colin Kelly Middle School in Eugene, Oregon. "A teacher in a secondary school sees anywhere from 120 to 180 students a week," he says. "That's a tremendous amount of record keeping—what we call grunt work."

These days, Miller keeps his records with an Apple computer and a program called *Report Card*. "At the end of a grading period, most teachers take an entire day to average their grades," he says. "I've been able to do it in 40 minutes."

High school kids aren't the only hackers anymore. More and more teachers are using computers. There are dozens of software packages out there that teachers can use to organize their lessons, manage testing and grading, and make the job easier. Here are a few of them:

Archive. This program allows you to design your own tests. The computer can randomly mix multiple-choice, true/false, and essay questions, and automatically print test instructions for each of type of question. You can make different versions of the same test and print out an answer key.

To be on the safe side, *Archive* will let you assign a password so your students won't be tempted to crack the program and get a peek at next week's big exam. (DHC Educational Software, for Apple II.)

Report Card. Keeps track of the records of 300 students on one disk. You assign different "weights" to tests, quizzes, final exams, and homework assignments. The computer will figure out class averages, percentages, and even give letter grades. Reports can then be printed out for parents or school administrators. (Sensible Software, For Apple II, IBM PC.)

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Grade Manager. A similar program that lists all students in the class in alphabetical order or ranks them by grades. The "Missing Assignments" section lists all students who haven't turned in their work, with a list of what's missing. (Smoky Mountain Software, for Commodore 64/128.)

Math Assistant. Besides helping you compile tests, this program helps identify math errors. Evidently, there are 80 different types of math errors that students frequently make. The computer can tell you which students are making which kinds of mistakes and help you instruct them better. (Scholastic Software, for Apple II.)

We often read about how computers are revolutionizing education, but we rarely hear how they're revolutionizing *teaching*. By using a computer, a teacher no longer has to go home after school and spend the whole night grading and shuffling papers. Homework is for the pupils, not the teachers, right?

Students, watch out. You no longer corner the market on technology. Teachers are catching on and using computers for all kinds of tasks themselves. In fact, a company called Dynacomp has a piece of software that might throw a scare into a few kids out there. It's called *School Discipline Manager*.

I shudder to think what sort of discipline the computer might dish out.

Other programs to look for: Exams (*Microsoftware Services*), for TRS-80; Exams II (*Shenandoah Software*), for TRS-80; Exam Writer (*Orange Microware*), for CP/M, IBM PC. Teachers should also check out the Education Forum, a special interest group on CompuServe.

MECC makes a series of programs for educators called The Administrators. They've even got one program designed to "develop bus routes, minimize the route mileage, and maximize the efficiency of each route."

Find a Good Restaurant

Hungry New Yorkers can find the perfect eatery with the help of their personal computers. *Eat N.Y.* provides a database of more than 4200 restaurants around the Big Apple—from the A & A Deli on Second Avenue to Zipz's Pizza at Lexington and 59th Street.

Mitchell Golden, 26, who created *Eat N.Y.*, says, "I figured it was a good idea that nobody had done before. In New York City, everybody wants two things—money to spend and a good restaurant to spend it in."

Famished computerists can find the names, addresses, and phone numbers of just about every type of food you can imagine in *Eat N.Y.*—Chinese, Cuban, African, Mexican, and Japanese, not to mention 29 McDonald's locations. Fast food goes high-tech.

But why pay \$39 for a computerized restaurant guide when you can just look under *R* in the yellow pages for free? Because the computer will *search* for the right restaurant for you. Let's say you're in the mood for Italian food, and you want to eat on the Upper West Side. Type that information into your computer, and *Eat N.Y.* searches through its memory for any restaurants that meet those two qualifications. *Eat N.Y.* can also search for all the restaurants in a particular price range, all the ones that accept credit cards, or all the four-star restaurants in town. If you've got a modem, the program can even dial the number for you.

"With the yellow pages, your fingers have to do the walking," complains Golden. "With *Eat N.Y.*, your *computer* does the walking. That leaves your fingers free to do the eating."

Of course, you can't get too picky. If you ask the computer to find an inexpensive four-star Polynesian restaurant on the Lower East Side that takes plastic, it will inform you that, "No restaurants meet your criteria." The computer won't *start* the perfect restaurant for you—it only lists what exists.

◆ *Miscellaneous* ◆

Eat N.Y. even provides capsule reviews of about 500 of the restaurants in the database. Ennio & Michael's came out particularly well ("Excellent Southern Italian dishes—stand-outs are the shrimp fra diavolo and the fish salad"), while chic Joanna's fared poorly ("You may think you want to eat here, but you probably don't. If you're cornered, have the lamb").

So far, Golden has sold only "a few hundred" copies of his program, but the initial response has encouraged him. He is presently at work on his next series of releases—*Eat Boston*, *Eat Washington*, and if all goes well, *Eat Los Angeles*.

K.I.N., for IBM PC, Macintosh.

Other programs to look for: *Dining in Manhattan (Concept Development Associates)*, for Apple II.

Have a Conversation with Your Computer

If the studio of a knowledgeable theoretician is a mansion, then is the truck of an ignorant physicist a station wagon?

Racter

The computer, like a loyal pet, can be your best friend when humans are unavailable. This doesn't mean, of course, that your computer friend will make a lick of sense. But you'll probably have a better conversation with your computer than you will with your dog.

Since the release of *Eliza*, the computer psychiatrist (see "See a Shrink"), there have been several programs that talk with you. That's all—talk. They don't solve your marital problems. They don't manage your business or save you time. They just give you a conversation—a sadly neglected art form these days.

Mindscape's *Racter* (short for *raconteur*) is the most popular of these conversation programs. As with *Eliza*, you type a sentence or question into the keyboard and the computer makes a response. For instance,

You: Why don't you drop dead?

Racter: Oh, but I do drop dead! Why indeed? The reason I do drop dead is that rejecting is not wanting, you know. And computers who reject insist that I do drop dead. The silicon have emotional ways. What sport do you play?

And so on. Unlike *Eliza*, which responds with canned answers to keywords in your sentences, *Racter* continually generates new prose. It never says the same thing twice. Hundreds of nouns, verbs, and adjectives are stored in the program's 2800-word vocabulary. The computer puts them together into (mostly) grammatical sentences that (mostly) make sense. De-

◆ *Miscellaneous* ◆

pending on its mood, *Racter* can simulate a poet, a philosopher, a friend, or some jerk you can't get off the phone.

Other conversation programs have their specialties. Antic Software's *Mom and Me* simulates a conversation with a Jewish mother. An Ohio-based company called Thunderstone makes a program in which all the responses are lyrics from Bob Dylan songs.

Antic Software's *Babble 1-2-3* (no relation to Lotus' 1-2-3) may be the most outrageous and versatile of them all. The program writes nonsensical computer-generated love letters, letters of complaint, and even a phony Ph. D. thesis for you ("When the object is the subject, the nature of concrete is the same as whatever it is").

Mindscape, for Apple II, Commodore 64/128, IBM PC, Macintosh.

Antic Software, for Apple II, Atari ST.

Other programs to look for: George Plimpton's *Great Speaker's File of Stories, Jokes, and Anecdotes (Bureau of Business Practice)*, for IBM PC.

The Everything Program

A few years back, some genius in the computer industry realized something the rest of us had known all along—it's a drag to use one program, pull the disk out of the computer, and load another program. Why not put more than one program on the same disk, so the user could effortlessly switch around among the several programs he or she used regularly? That's how integrated software (one of the more horrible of the high-tech buzzwords) was born.

The Works is an ambitious program that attempts to combine "a complete collection of home software" on a single disk. The 13 programs in *The Works* include a word processor, art program, music program, telephone/address book, appointment calendar, calculator, typing lesson, family budget, loan amortization, stock portfolio, conversion program for weights and measures, math formulas, and an educational math game. The disk sells for \$50, which works out to just \$3.85 per program.

Despite its name, *The Works* doesn't even pretend to be the only program you'll ever need. The word processor doesn't offer many of the features available on other word processors. The art program is severely limited. All the programs are adequate, but none of them is great. *The Works* is aimed at beginners who have purchased a computer and want to get an idea of what it can do.

This brings up the "Swiss army knife" problem. You've probably used one of these handy gadgets on a camping trip. In addition to having a sharp blade, they often have corkscrews, screwdrivers, spoons, and scissors sticking off in all directions. A Swiss army knife will do just about anything. You may use it to open a can, fix your car, put a tent together, or clean a fish.

The Works won't clean fish, but like a Swiss army knife, it is a single product that can do many different things.

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But a Swiss army knife isn't the perfect tool. In order to cram all those tools into a single unit, compromises had to be made. The corkscrew had to be shorter. The spoon couldn't be deep enough to hold much liquid. The scissors had to be flimsy.

Integrated software programs suffer from the same limitations. In order to cram all those programs into a single disk, compromises had to be made. When you've got 13 programs on one disk, you can't expect them all to be gems. Swiss army knives are great for camping trips, but if you've got a job to do at home, you'd probably rather have a good set of power tools.

The Works, despite its disadvantages, is a step in the right direction. At least it demonstrates clearly to a beginner that a computer can do a variety of worthwhile tasks around the house. It may not be revolutionary, but it is evolutionary.

First Star Software, for Apple II, Commodore 64/128.

CHAPTER 15

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Telecommunicating

Someday, computers won't need software of any sort.

Why is it that we have to plug something into a computer before it will do anything? When we turn on a TV set, we don't have to mess with loading disks or cartridges before we can watch a program. We don't have to go to the store and buy this week's "Cheers" if we want to watch it.

When we turn on the radio, we flip one knob, and dozens of programs are seconds away. It's almost as if they're contained in the radio itself. We don't have to go to the store to buy them. We don't have to pay \$20 or \$30—or \$400—to listen to a TV or radio show. It's easy and convenient.

Maybe that's why 98 percent of all homes have a TV and at least one radio, while only 15 percent have computers.

For many beginning computerists it's a rude awakening to find they'll have to pay \$50 to process words, another \$50 to make music, and another \$100 to manage their finances. People are thinking, "I paid \$1,000 for this box. I want it to work for me *now*." The hassle of shopping, buying, loading, and learning computer programs prevents many people from bothering with them at all.

Imagine, if you could turn on your computer, hit a few keys, and be able to use any of the software mentioned in this book. That's what I want. Then the computer would not only be a powerful tool, but it would be convenient and easy to use, too—like any other household appliance.

Telecommunications may be the answer. Computers can communicate with other computers. This is accomplished by hooking up the two machines over telephone lines with an inexpensive piece of hardware, called a *modem*, on each end. Without going into technical details, data in your computer can be sent over the phone line to any other computer, and vice versa.

So you don't have to buy your software in a store. You can get it over a telephone line, almost the same way radios

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and TVs receive their signals over the airwaves. And while store-bought software for different computer brands is usually incompatible, *any* computer can send information via telecommunications to any other computer. Apples, IBMs, Commodores, and Ataris can exchange data freely.

That's what telecommunications is all about. The possibilities are staggering. The programs in the first 14 chapters of this book don't even scratch the surface of all the things you can do with a computer when you add telecommunications. It opens up a whole new world of unusual, practical, and wonderful things that are waiting at your keyboard.

The Electronic Candy Store

For example, let's take a brief walk through CompuServe, the biggest computer information network. This "net" is owned by H&R Block, and it's attracted over 276,000 subscribers in just seven years.

The first thing I usually do after *logging on* is to check my electronic mail. I just type GO EASY to find out whether any of my CompuServe friends have sent me a message. I can read the messages in my *mailbox* (actually a chunk of memory in a mainframe computer in Ohio), print them out, and send letters to the mailboxes of any CompuServe subscribers. The messages get delivered minutes after I send them. My friends will see them the next time they check their boxes.

Electronic mail, or E-mail, is faster, cheaper, and more convenient than sending regular letters (my CompuServe address is 76174,760 if you'd like to say hello).

After mail call, I may want to look something up in the encyclopedia for an article I'm writing. I don't own an encyclopedia. I don't need one. All ten million words in Grolier's *Academic American Encyclopedia* are available through CompuServe, just by typing six keys on my computer (GO space AAE). I can look up anything in a few seconds.

Grolier's encyclopedia is more up-to-date than the encyclopedia in your local library. Because it's not printed on paper, this electronic version can be updated frequently. In fact, just one week after Leonid Brezhnev died, the online encyclopedia already had a listing for "Andropov, Yuri."

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My research completed, it's time to spoil myself with a treat. In CompuServe's The Electronic Mall (type GO MALL), you can buy thousands of products, ranging from a fur coat for your Cabbage Patch doll to a dozen live lobsters. You just browse through electronic listings of products for sale and pay for them by giving your credit-card number. Your purchase should arrive in the mail in a few weeks. Over a hundred "stores" are in The Electronic Mall, including Gucci, Sears, Waldenbooks, and Bloomingdales.

Electronic shopping is great if you hate shopping, live far away from a shopping center, or don't have time to shop during business hours. Don't look to buy wallpaper, though. Some things you just have to *see* with your own eyes.

Next, I might want to plan my upcoming vacation. With my computer, I can choose an airline flight, find a hotel room and rental car, and pay for everything. All I have to do is tell CompuServe's Travelshopper (GO TWA) where and when I want to go. It will tell all the flights available and give their prices. To book my hotel, I just type GO HOTEL to get a listing of 28,000 hotels worldwide. I just pick the city and the price range, and the computer gives me descriptions of the appropriate hotels.

One of the best ways your computer can help you travel is by connecting you with people in the city you'll be visiting. Most of the information networks post a list of their North American subscribers. If you're planning to visit Philadelphia, for instance, CompuServe will give you the names, ID numbers, and interests of 285 subscribers who live there. You can send electronic mail to any of these people and ask them about the best Philly sights, restaurants, events, and so on.

Before I sign off for the night, I'll probably spend a few minutes on CompuServe's popular CB Simulator (GO CB). It works like the citizens band radios that many people have in their cars. Basically, CB is an open line that anyone can participate in. People type comments on their keyboards, and the words appear on the screens of everyone who has "tuned into" the channel. Each night, hundreds of people all over the country sit at their computers and talk to each other. Everybody sees what everybody else is typing. It's a great way to

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meet new friends. Last year, a couple of CBers who go by the handles Angel and Malaprop met on CompuServe and got married.

The CB Simulator is an electronic cocktail party. It's very much like being at a *real* party, except you don't have to dress up. In fact, you don't even have to get dressed at all.

Some psychologists have expressed the fear that computers will turn us into a bunch of brain-dead zombies who relate to machines, not human beings. But as you can see, computers open up lines of human interaction that never existed before. Telecommunicating changes the whole idea of computing from a solitary activity into a social one. Rather than isolating people, computers can actually bring people together. When people all over the country—or all over the world—can log onto a network at the same time, geography no longer puts a limit on communication. The computer moves Marshall McLuhan's concept of the global village a bit closer to reality.

In one evening on CompuServe, you can sample only a tiny fraction of all it has to offer. There are over 800 services (I try to avoid the term *databases*), from the Auto Racing Forum (GO RACING) to Cupcake's gossip column (GO CUP). You can read movie reviews, get a laugh with The National Sati-rist, visit the Handicapped Users' Database, or play a game of *MegaWars III* with people thousands of miles away. It's an electronic candy store.

CompuServe, by the way, is only one of *many* information networks. You might also want to take a look at The Source (a subsidiary of Reader's Digest), Delphi, QuantumLink (Commodore), or GENie (General Electric). Their addresses are in the appendix, and they'll be happy to send you information on their services. You might also pick up Elizabeth Ferrarini's *Infomania* (Houghton Mifflin, 1985) and Ira Mayer's *The Electronic Mailbox* (Hayden, 1985); both are devoted entirely to telecommunications.

Bulletin Boards

You don't have to be General Electric or Reader's Digest to run your own information network. With a computer, a special modem, and software, people are running networks from their

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own homes. These are called electronic *bulletin board systems* (BBSs), and there over 2500 of them, according to *The Computer Phone Book*. An individual can't offer the variety of services that CompuServe can, but bulletin boards are usually free to all. They offer specific services and charm you won't find on the big boards.

For instance, if you've got a hot idea for the next Pet Rock, there's the Inventors and Authors BBS (have your computer dial 817-430-3760). If you're going through a job change, The Career Network (301-664-1000) will put your résumé online for prospective employers. You can get information about dining in all the major cities of the United States through Restaurant Referral Hotline (1-800-LETS EAT), and there's a bulletin board that's dedicated to preventing the spread of AIDS (703-765-6290).

The cause of world peace is advanced through PeaceNet (415-948-1474), which links over 6000 peace groups. The Golem (312-787-7865) provides information on Judaism. Members of Mensa (the club for people who've scored high on I.Q. tests) can dial up the Mensa BBS (305-842-1861) 24 hours a day. I suppose you've got to give your I.Q. as your password on that one.

If you're not feeling so hot, Doc-in-the Box (216-368-3888) will answer your medical, dental, and other health-related questions. Psychologist Sid Schneider runs a bulletin board for people who want to stop smoking (914-762-6098). And if you find yourself feeling tense after kicking the habit, call the Stress Management Bulletin Board (703-382-6472). It's run by Bruce Walker, a doctoral student in clinical psychology at Virginia Polytechnic Institute and State University.

Follow the computer magazines to find out about new bulletin boards, which are popping up and closing down all the time. You'll find the most unusual things out there. A couple of years ago, a California mentalist named Mary McNeal was giving psychic readings and predicting callers' futures through her Commodore 64. I don't think she was very successful, though. A recent call to the number produced a recording saying the line had been disconnected.

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Other Services

Here's a brief rundown on some other types of information you can find.

News and information. Just about all the networks provide up-to-the-minute news, sports, and weather reports, just like newspapers. In fact, with many of the networks you can read the complete text of *The New York Times* and *Wall Street Journal* off your computer screen.

But the computer is even better than a newspaper. If all the news that's fit to print isn't enough for you, you can read tomorrow morning's *Times* tonight. New York Pulse, a network being tested by Covidea, will be providing that service shortly. On CompuServe, there's an electronic edition of *Omni* magazine that appears seven days before the newsstand edition.

Electronic delivery of written material is a lot faster than printing presses, trucks, and mail carriers. Besides, when you read the newspaper off the screen, you don't get ink on your fingers.

Home banking. You can use your computer to pay your bills, transfer money from one bank account to another, check your balance, see your statements, track your budget, and balance your checkbook. Many of the larger banks in big cities have started to offer these home-banking services. When you pay a bill by computer, the bank takes the money from your account and sends that amount to, for instance, American Express. You don't have to write a check or bother with the mail.

Home banking is easy and fast, and you'll save some money in stamps. But you can't cash a check, make a deposit, or make a withdrawal (the three main reasons we use banks in the first place). Also, you generally have to pay about \$10 a month to bank at home.

Business and investing. Most of us can't afford brokers, gofers, and flunkies to do our bidding. But for people who are serious about investing their money wisely, the Dow Jones News/Retrieval service can be just as good. Stock quotes appear on the system 15 minutes after they hit Wall Street, and you can scan detailed corporate files on 4600 companies, in-

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cluding all of those listed on the New York and American Stock Exchanges.

If you think the stock market goes up and down with the hemlines, you can check it out by looking at historical data on the market. Dow Jones has dozens of financial services for professional and amateur investors, as well as transcripts of the television show "Wall Street Week." In the past, only investment brokers had access to much of this information. Maybe that's why over 240,000 people subscribe to DJN/R.

Does it all sound too good to be true? I'm not going to lie to you. There is some hype here. Telecommunications is not the magic pill that will save the world. It's expensive, for one thing. Most of the networks charge by the minute. One hour on CompuServe will soak you for \$12.50 during the day and \$6.00 at night. People have been known to become addicted and spend fortunes to stay online. Frugal people become frustrated, because they can feel the meter running while using the system. In addition, modems are still confusing to hook up and use. They're not as simple as turning on a radio or TV, and that turns off a lot of people. That's another reason telecommunications and home computers have yet to take the world by storm.

You Ain't Computed Nothin' Yet

Our grandparents witnessed the birth of radio and motion pictures. Our parents witnessed the birth of television. If you're over 25, you've already witnessed the birth of stereo and the compact disc player.

Critics of the Computer Revolution sometimes forget that we're witnessing the birth of another new medium. Personal computing is only 10 years old. Historically, new technology takes a long time to develop. Television was born in the 1920s, but it wasn't until the late 1940s that more than a few thousand homes had a TV set. It took the motion picture industry 8 years before somebody even thought of shooting the first close-up and 13 years to figure out slow motion. Twenty years after the airplane was invented, aviation was still mainly a hobbyist sport.

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The history of computers hasn't even taken place yet. Computing will undoubtedly evolve before our eyes, as other technologies evolved before the eyes of earlier generations. As Al Jolson said in the first talking movie 42 years after motion pictures were invented, "You ain't heard nothin' yet, nothin' yet, folks!"

Where to Find the Weirdware

Where to Find the Weirdware

Here is a list of every company that has been mentioned in this book. The addresses are accurate as we go to press. But you know the computer business—a company may start up on Monday, merge with another one on Wednesday, and go out of business by the end of the week. A few of them may have moved or folded by the time you try to reach them.

But, for the most part, they're as listed, and they'll be happy to send you more information on their software. You may even find interesting programs in their catalogs that aren't included in this book. Happy computing.

Acorn Software
353 W. Lancaster Avenue
Radnor Square
Wayne, PA 19087
215-964-9103

Activision
Drawer 7286
Mountain View, CA 94039
415-960-0410

Adidas
1122 Route 22
Mountainside, NJ 07092
201-233-8030

Advanced Financial Planning
20922 Paseo Olma
El Toro, CA 92630
714-855-1578

AgDisk
Harris Technical Systems
624 Peach Street
P.O. Box 80837
Lincoln, NE 68501
402-476-2811

AIS Microsystems
1007 Massachusetts Avenue N.E.
Washington, DC 20002

Aldus Corporation
616 1st Avenue, Suite 400
Seattle, WA 98104
206-441-8666

Alphabyte Software
P.O. Box 649
Lafayette, CO 80026
303-665-3444

Alsoft Software
305 Large Avenue
Clairton, PA 15025
412-233-4659

American Open University
21 Chestnut Street
Greenville, NY 11548
516-348-3300

Andent
1000 North Avenue
Waukegan, IL 60085
312-223-5077

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Antic Software
524 2nd Street
San Francisco, CA 94107
415-957-0886

Apple Computer
20525 Mariani Avenue
Cupertino, CA 95014
408-996-1010

Arcturus Software
2332 Palisade Drive SW
Calgary, Alberta
Canada T2V 3V1

Arrays
6711 Valjean Avenue
Van Nuys, CA 91406
818-901-8828

Artificial Intelligence Research
Group
921 North La Jolla Avenue
Los Angeles, CA 90046
213-656-7368

Artworx
150 N. Main Street
Fairport, NY 14450
716-425-2833

Ashby & Associates
P.O. Box 594
Chagrin Falls, OH 44022
216-247-8113

Astrolabe
Box 28
Orleans, MA 02653
617-255-0510

Automotive Computer Group
1421-B Court Street
Clearwater, FL 33516
813-443-5761

Autumn Color Software
4132 Lay Street
Des Moines, IA 50317

Avalon Hill
4517 Harford Road
Baltimore, MD 21214
301-254-9200

Avant-Garde
37B Commercial Blvd.
Novata, CA 94947
415-883-8083

Bantam Electronic Publishing
666 Fifth Avenue
New York, NY 10103
212-765-6500

Barron's Educational Series
113 Crossways Park Drive
Woodbury, NY 11797
516-921-8750

Batteries Included
30 Mural Street
Richmond Hill, Ontario
Canada L4B 1B5
416-881-9941

Baudville
1001 Medical Park Drive SE
Grand Rapids, MI 49506
616-957-3036

BCI Software
P.O. Box 730
Ringwood, NJ 07456
201-728-7796

Bible Research Systems
2013 Wells Branch Pkwy.
Suite 304
Austin, TX 78728
512-251-7541

Bluebrush
P.O. Box 3585
Santa Clara, CA 95055

Blue Chip Software
6744 Eton Avenue
Canoga Park, CA 91303
818-346-0730

Bodylog
120 Mt. Kisco Avenue
Mt. Kisco, NY 10549
914-241-7122

Boston Software
1260 Boylston Street
Boston, MA 02215
617-267-4747

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Bowling Computer Systems
824 Indiana
Wichita Falls, TX 76301
817-761-2018

Brain Builders
P.O. Box 11324
Hauppauge, NY 11788
516-667-9339

Brainpower
24009 Ventura Blvd.
Suite 250
Calabasas, CA 91302
818-884-6911

Brøderbund Software
17 Paul Drive
San Rafael, CA 94903
415-479-1700

Brown-Wagh Publishing
800 Charcot Avenue, #110
San Jose, CA 95133
408-263-9133

Bureau of Business Practice
Division of Simon & Schuster
24 Rope Ferry Road
Waterford, CT 06386
800-243-0876

Camde Corporation
46 Prince Street
Rochester, NY 14607
716-473-5330

John B. Carson Jr.
Personal Computer Products
11200 Lockwood Drive, Suite 307
Silver Spring, MD 20901

CBS Interactive Learning
One Fawcett Place
Greenwich, CT 06836
800-CBS-ASK-4

Chevrolet Motor Division
General Motors
30007 Van Dyke Avenue
Warren, MI 48090

Clinical Reference Systems
600 S. Cherry Street, Suite 20
Denver, CO 80222
303-399-7089

CMA Micro Computer
55722 Sante Fe Trail
Yucca Valley, CA 92284
619-365-9718

The College Board
45 Columbus Circle
New York, NY 10023
212-713-8000

Columbia Pacific Technologies
7511 W. Arrowhead, Suite E
Kennewick, WA 99336
509-783-0932

Columbia Software
P.O. Box 2235
5461 Marsh Hawk
Columbia, MD 21045
301-997-3100

Commodore
1200 Wilson Drive
West Chester, PA 19380
215-431-9100

Compress
Division of Wadsworth
P.O. Box 102
Wentworth, NH 03282
603-764-5831

Compucrafts
RFD 2, Box 216
Lincoln, MA 01773
617-259-0409

Compu-Job Software
20516 Lorne
Taylor, MI 48180
313-383-0761

Compu-Quote
6914 Berquist Avenue
Canoga Park, CA 91307
818-348-3662

CompuServe
P.O. Box 20212
5000 Arlington Centre Blvd.
Columbus, OH 43220
614-457-0802

Computer Management Corporation
2424 Exbourne Court
Walnut Creek, CA 94596
415-930-8075

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Concept Development Associates
7960 Old Georgetown Road
Suite 2D
Bethesda, MD 20814
301-951-0997

Conduit
University of Iowa
Oakdale Campus
Iowa City, IA 52242
319-353-5789

Consistent Software
1050 Duncan Avenue, Suite G
Manhattan Beach, CA 90266
213-374-2304

Covox
675-D Conger Street
Eugene, OR 97402
503-342-1271

CRYO Resources
701 Seventh Avenue
New York, NY 10036
212-840-1233

CTRL Health Software
18653 Ventura Blvd., #348
Tarzana, CA 91356
818-788-0888

Custom Computer Services
P.O. Box 9189
Long Beach, CA 90810

Custom Computer Software
1108 Woodshire Drive
Knoxville, TN 37922
615-966-6832

Cyber Enterprises
17517-K Fabrica Way
P.O. Box 2066
Cerritos, CA 90701

CyberLYNX Computer Products
4828 Sterling Drive
Boulder, CO 80301
303-444-7733

Cyclone Software
3305 Macomb Street NW
Washington, DC 20008
202-362-8740

CZ Software
358 Forest Road
South Yarmouth, MA 02664
617-771-4155

Datamost
20660 Nordhoff Street
Chatsworth, CA 91311
800-692-1649

Datasoft
19808 Nordhoff Place
Chatsworth, CA 91311
818-886-5922

Davidson & Associates
3135 Kashiwa Street
Torrance, CA 90505
800-556-6141

Davidson Software Systems
P.O. Box 21002
Lansing, MI 48909
517-332-5989

Davka
845 North Michigan Avenue
Suite 843
Chicago, IL 60611
800-621-8227

DCH Educational Software
125 Spring Street
Lexington, MA 02173

Delphi
General Videotex
3 Blackstone Street
Cambridge, MA 02139

Designware
185 Berry Street
San Francisco, CA 94107
415-546-1866

DigiGraphics
633 Park Court
Santa Clara, CA 95050

Digital Visions
14 Oak Street, Suite 2
Needham, MA 02192
617-444-9040

Diversions
505 W. Olive Avenue, #520
Sunnyvale, CA 94086
408-245-7575

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DJ Software
10636 Main Street, Suite 414
Bellevue, WA 98004
206-883-9257

DLM Teaching Resources
One DLM Park
Allen, TX 75002
214-248-6300

Dow Jones News/Retrieval Service
P.O. Box 300
Princeton, NJ 08540
609-452-1511

Dynacomp
1064 Gravel Road
Webster, NY 14580
716-671-6160

Early Development Resources
12222 Merit Drive, Suite 660
Dallas, TX 75251
800-527-2783

Eastern Computer Consulting
19 Norwich Street
Worcester, MA 01608
617-757-3131

East Hampton Industries
66 Newtown Lane, Drawer EEEE
East Hampton, NY 11937
516-324-2224

Educational Activities
P.O. Box 392
Freeport, NY 11520
516-223-4666

Educational Planning
P.O. Box 79606
Houston, TX 77279

Educomp Computer Services
2429 Oxford Street
Cardiff-by-the-Sea, CA 92007
619-942-3838

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94403
415-571-7171

Epyx
1043 Kiel Court
Sunnyvale, CA 94089
408-745-0700

F/22 Press
P.O. Box 141
Leonia, NJ 07605
201-568-6250

Federal Hill Software
825 William Street
Baltimore, MD 21230
301-685-6254

Festive Fare
P.O. Box 6447, Dept. C
Grand Rapids, MI 49506

First Star
18 E. 41st Street
New York, NY 10017
212-532-4666

fischertechnik
fischer America
175 Route 46 West
Fairfield, NJ 07006
201-227-9283

Genealogy Software
P.O. Box 1151
Port Huron, MI 48061
519-344-3990

General Motors
See Chevrolet Motor Division
General Motors

GEnie
General Electric
401 N. Washington Street
Rockville, MD 20850
800-638-9636 ext. 21

GE Ridge Services
170 Broadway, Suite 201
New York, NY 10038
718-833-6335 ext. 77

Gessler
900 Broadway
New York, NY 10003
212-673-3113

Golfsoft
10333 Balsam Lane
Eden Prairie, MN 55344

Herbi Gray Handweaving
P.O. Box 2343
Olympia, WA 98507
206-491-4138

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Great Game Products
8804 Chalon Drive
Bethesda, MD 20817
800-426-3748

Haba Systems
6711 Valjean Avenue
Van Nuys, CA 91406
818-901-0701

Hack & Slash Software
Box 6066
Santa Maria, CA 93456

Hayden Books
10 Mulholland Drive
Hasbrouck Hts., NJ 07604

Hayden Software
600 Suffolk Street
Lowell, MA 01854
617-937-0200

HesWare
390 Swift Avenue, #14
South San Francisco, CA 94080
415-871-0570

Hippopotamus Software
985 University Avenue, Suite 12
Los Gatos, CA 95030
408-395-3190

Hi Tech Expressions
Thoughtware
2699 South Bayshore Drive, 1000-A
Cocanut Grove, FL 33133
305-854-2318

Hi-Tech Ministries
6540 Emerald, Suite 100
Boise, ID 83704
208-323-8244

Hollander Publishing
P.O. Box 9405
Minneapolis, MN 55440
612-544-4111

Home & Hobby Software
4336 Morgan Avenue South
Minneapolis, MN 55409
612-925-2591

Jack Houck
16892 Canyon Lane
Huntington Beach, CA 92649

HowardSoft
8008 Girard Avenue, Suite 310
La Jolla, CA 92037
619-454-0121

HRM Software
175 Tomkins Avenue
Pleasantville, NY 10570
914-769-7496

Kerson Huang
P.O. Box 1083
Marblehead, MA 01945
617-631-5985

Human Edge Software
2445 Faber Place
Palo Alto, CA 94303
800-624-5227

The Humane Society of the U.S.
2100 L Street N.W.
Washington, DC 20037
202-452-1100

H.U.M.A.N.S. Inc.
P.O. Box 352
Sterling, VA 22170
804-525-3441

Imagic
981 University Avenue
Los Gatos, CA 95030

International Self-Analysis Institute
P.O. Box 520950
Salt Lake City, UT 84152
801-487-3814

IntraCorp
13500 N. Kendall Drive
Suite 185
Miami, FL 33186
305-382-6567

ISC Consultants
14 E. 4th Street, Suite 602
New York, NY 10012
212-477-8800

Jacobsen Software Designs
1590 E. 43rd Avenue
Eugene, OR 97405
503-343-8030

JAL Software
Box 128
S. Milwaukee, WI 53172

◆ *Where to Find the Weirdware* ◆

Jance Associates
P.O. Box 234
East Texas, PA 18046
215-398-0434

JCW Enterprises
25150 Thorndyke
Southfield, MI 48034
313-353-7492

Jersey Cow Software/Cognetics
323 Franklin Avenue
Princeton, NJ 08540
609-683-1010

Jones, Professor
See Professor Jones

K.I.N.
10 Columbus Circle, Suite 1260
New York, NY 10019
212-333-7854

Charles Kluepfel
11 George Street
Bloomfield, NJ 07003
201-338-0996

Koala Technologies
2065 Junction Avenue
San Jose, CA 95131
408-435-8883

Krell Software
1320 Stony Brook Road
Stony Brook, NY 11790
516-751-5139

Lassen Software
P.O. Box 1190
Chico, CA 95926
916-891-6957

The Learning Seed
21250 N. Andover Road
Kildeer, IL 60047
312-438-3251

Learning Well
200 S. Service Road
Roslyn Heights, NY 11577
516-621-1540

Le Com Enterprises
Box 346
Winfield, IL 60190
312-682-0650

Lewis Enterprises
Rt. 14, Box 45
Moore, OK 73165
405-794-3953

Manhattan Graphics
163 Varick Street
New York, NY 10013
212-974-2778

Manhattan Software
P.O. Box 148
Peterborough, NH 03458
603-924-9998

Marathon Software
P.O. Box 1349
Jacksonville, TX 75766
214-586-8212

Marshware
Dist. by Marshfilm
P.O. Box 8082
Shawnee Mission, KS 66208
816-523-1059

MasterSoft
20524 Brighton Woods Circle
Bend, OR 97702
503-388-7654

McGraw-Hill Book Company
Order Services
Princeton Road
Hightstown, NJ 08520
609-426-5254

MECC
3490 Lexington Avenue North
St. Paul, MN 55112
612-481-3500

MegaSoft
P.O. Box 1080
Battle Ground, WA 98604
206-687-7176

Melodian
120 W. 58th Street
New York, NY 10019
212-757-2287

Merlan Scientific
247 Armstrong Avenue
Georgetown, Ontario
Canada L7G 4X6
416-877-0171

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Micro Education Corp. of America
285 Riverside Avenue
Westport, CT 06880
203-222-1000

Microlog
18713 Mooney Drive
Gaithersburg, MD 20879
301-258-8400

MicroScope Systems
1 Britton Place, #7
Voorhees, NJ 08043
609-772-2272

Microsoft
16011 N.E. 36th Way
Box 97017
Redmond, WA 98073
206-882-8080

Microsoftware Services
P.O.B. 776
Harrisonburg, VA 22801

Micro Star
2701 National Place
Garland, TX 75041
214-278-0543

Micro-W
1342B Route 23
Butler, NJ 07405
201-838-9027

Midwest Software
P.O. Box 214
Framington, MI 48024
313-477-0897

Millett Software
146 West 255 South
Orem, UT 84058
801-224-6841

Mindscape
3444 Dundee Road
Northbrook, IL 60062
312-480-7667

Minnesota Educational Computing
Consortium
2520 Broadway Drive
St. Paul, MN 55113
612-376-1118

MTS
P.O. Box 596
Niceville, FL 32578
904-678-3328

Multibotics
#A2561 South 1560 West
Woodscross, UT 84087
801-298-9077

National Microware
2102 Business Center
Irvine, CA 92715
714-752-2344

Navic Software
Box 14727
North Palm Beach, FL 33408
305-627-4132

NewArts
P.O. Box 2700
Huntington Beach, CA 92647

New Life Institute
1620 Seabright Avenue
P.O. Box 2390
Santa Cruz, CA 95063
408-429-1122

Nolo Press
950 Parker Street
Berkeley, CA 94710
415-549-1976

Odesta
4084 Commercial Avenue
Northbrook, IL 60062
800-323-5423

Omega Software
P.O. Box 355
Round Rock, TX 78680
512-255-9569

Orange Microware
4418 E. Chapman, #311
Orange, CA 92669
714-639-8106

OR-D Systems
1 Martin Avenue
Cherry Hill, NJ 08002
609-665-2255

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Ortho Information Services
575 Market Street
San Francisco, CA 94105
415-894-1981

Parsons Software
1920 Briar Meadow
Arlington, TX 76014
817-465-4720

Passport Music Software
625 Miramontes Street
Half Moon Bay, CA 94019
415-726-0280

Paul's Electric Computer
P.O. Box 74157
Los Angeles, CA 90004

Pay Less Tax, Inc.
1685 West Hamlin Road
Rochester, MI 48063
313-852-5233

PDS Sports
P.O. Box E
Torrance, CA 90507
213-212-7788

Penguin Software
P.O. Box 311
Geneva, IL 60134
312-232-1984

Photonet
250 West 57th Street
New York, NY 10019
212-307-6999

Piedmont Specialty Software
Box 6637
Macon, GA 31208
912-474-2318

Polygon Industries
P.O. Box 24615
New Orleans, LA 70184
504-282-5372

Powerbyte Software
905 Lorien Drive, Box 579
Gwynedd, PA 19437
609-424-5485

Practicorp International
44 Oak Street
The Silk Mill
Newton, MA 02164
617-965-9870

Professor Jones
1940 W. State Street
Boise, ID 83702
208-342-6939

Program Design International
798 North Avenue
Bridgeport, CT 06606
203-335-0908

Psycomp
P.O. Box 994
Woodland Hills, CA 91367
818-992-4884

Psycom Software
2118 Forest Lake Drive
Cincinnati, OH 45244
513-474-2188

Puma USA
492 Old Connecticut Path
P.O. Box 1369
Framingham, MA 01701
617-875-0660

QuantumLink
8620 Westwood Center Drive
Vienna, VA 22180
703-448-8700

Quest Learning Systems
1103 Homer Street
St. Paul, MN 55116

Quinsept
P.O. Box 216
Lexington, MA 02173
617-641-2930

Random House
201 E. 50th Street
New York, NY 10022
212-751-2600

Recreational Technology Interlude
11011 Richmond, Suite 600
Houston, TX 77042
713-952-1060

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Retail Solutions
1227 Innsbruck Drive
Sunnyvale, CA 94089
408-734-0653

RMH Software
P.O. Box 41
Wilsall, MT 59086

Rocky Mountain Medical Software
5680 S. Syracuse Circle, Suite 500
Greenwood Village, CO 80111
303-773-1237

Russian Software
P.O. Box 36
1744 W. Devon
Chicago, IL 60660

S & T Software
Division of American Only
13361 Frati Lane
Sebastopol, CA 95472
707-874-2352

Scarborough Systems
55 South Broadway
Tarrytown, NY 10591
914-332-4545

Scholastic Software
730 Broadway
New York, NY 10003
212-505-3000

Screenplay
2105 S. Bascom Avenue, Suite 164
Campbell, CA 95008

Seiko
Hattori Corporation
Consumer Electronics
1330 West Walnut Pkwy.
Compton, CA 90220

Self Help Legal Services
P.O. Box 10694
Minneapolis, MN 55440
612-924-3323

Sensible Software
210 S. Woodward, Suite 229
Birmingham, MI 48011

Sequoia Compu-Athletics
P.O. Box 67
Three Rivers, CA 93271
209-561-4418

Shannon Software
P.O. Box 6126
Falls Church, VA 22046
703-573-9274

Sharedata
7122 Shady Oak Road
Eden Prairie, MN 55344
612-829-0409

Shenandoah Software
P.O. Box 776
Harrisonburg, VA 22801

Sight & Sound Music Software
3200 S. 166th Street
New Berlin, WI 53151
414-784-5850

Simon & Schuster
Electronic Publishing Group
Gulf & Western Building
1 G & W Plaza
New York, NY 10023
212-333-2882

Smoky Mountain Software
P.O. Box 1710
Brevard, NC 28712
704-885-2516

Tom Snyder Productions
123 Mt. Auburn Street
Cambridge, MA 02138
617-876-4433

Softsync
162 Madison Avenue
New York, NY 10016
212-685-2080

Software Concepts
1116 Summer Street
Stamford, CT 06905
203-357-0522

Software Country
270 N. Canon Drive, #1297
Beverly Hills, CA 90210
213-278-8450

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Software Exchange
2681 Peterboro Road
P.O. Box 5382
W. Bloomfield, MI 48033
313-626-7208

The Software Toolworks
15233 Ventura Blvd., Suite 1118
Sherman Oaks, CA 91403
818-986-4885

The Source
1616 Anderson Road
McLean, VA 22102
800-336-3330

Spectrum Holobyte
1050 Walnut, Suite 325
Boulder, CO 80302
303-443-0191

Spinnaker Software
1 Kendall Square
Cambridge, MA 02139
617-494-1200

Springboard Software
7808 Creekridge Circle
Minneapolis, MN 55435
612-944-3915

Standard & Poor's
25 Broadway
New York, NY 10004
212-208-8581

StarSoft
P.O. Box 2524
San Anselmo, CA 94960
415-453-1372

Strategic Simulations
1046 North Rengstorff Avenue
Mountain View, CA 94043
415-964-1353

Sublogic
713 Edgebrook Drive
Champaign, IL 61820
217-359-8482

Sunburst Communications
Pleasantville, NY 10570
914-769-5030

Suncom
260 Holbrook Drive
Wheeling, IL 60090
312-459-8000

Sunset Software
3527 Oaklawn Avenue, Suite 119
Dallas, TX 75219
214-559-3095

Superior Micro Systems
P.O. Box 713
Wheeling, IL 60090

Suresoft
1311-A Dolley Madison Blvd.
McLean, VA 22101
703-356-9309

Symbiotic Technologies
P.O. Box 806
Mendocino, CA 95460
707-964-1910

TBR
P.O. Box 18
Temple, NH 03084
603-878-1947

Tech 2000 Software
263 Lugonia Street
Newport Beach, CA 92663
714-650-7240

TeleLearning
505 Beach Street
San Francisco, CA 94133
415-928-2800

Thought Technology
2180 Belgrave Avenue
Montreal, Quebec,
Canada H4A 2L8
514-489-8251

Timeworks
444 Lake Cook Road
Deerfield, IL 60015
312-948-9200

T/Maker Graphics
2115 Landings Drive
Mountain View, CA 94043
415-962-0195

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Tradewind Software
P.O. Box 26165
Honolulu, HI 96825
808-395-6700

UHL Research Associates
7926 Berner Street
Long Beach, CA 90808
213-493-1955

Urania Systems
P.O. Box 4890
Richmond, VA 23220
804-358-4715

Ventura Educational Systems
3440 Brokenhill Street
Newbury Park, CA 91320
805-499-1407

The V4CFE Software Company
P.O. Box 1171
Merritt Island, FL 32952

Videoware
19777 W. 12 Mile Road, Suite 180
Southfield, MI 48076
313-626-7208

Videx
1105 N.E. Circle Blvd.
Corvallis, OR 97330
503-758-0521

Virtual Combinatics
P.O. Box 13323
Oakland, CA 94661
415-654-3050

Visionary Software
P.O. Box 1063
Midland, MI 48641
517-835-9025

Warlock Software
Tylos Inc.
1900 Emery Street, Suite 318
Atlanta, GA 30318
404-352-1015

Weekly Reader Family Software
245 Long Hill Road
Middletown, CT 06457

Woodbury
127 White Oak Lane, CN#1
Old Bridge, NJ 08857
201-536-6382

WTC Publishing
131 NW Fourth Street, Suite 25
Corvallis, OR 97330

X-10
185A Legrand Avenue
Northvale, NJ 07647
201-784-9700

Yaker Environmental Systems
P.O. Box 18
Stanton, NJ 08885
201-735-7056

Zephyr Services
306 S. Homewood, Dept. C
Pittsburgh, PA 15208
412-247-5915

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Name of Program	Company	Page	Amiga	Apple II	Atari 8 bit	Atari ST	Commodore 64/128	Commodore VIC-20	IBM PC/PCjr	Macintosh	TI-99/4A	TRS	Other
Print Shop Graphics Library, Vol. 1, 2, 3	Broderbund	199		•	•		•		•				
QRS Digital Music Library	Micro-W	188	•	•		•	•			•			
ReadySetGo	Manhattan Graphics	212								•			
Saxophone Master	MasterSoft	187		•			•						
Singing Master	MasterSoft	187		•			•						
Stickers	Springboard	213		•			•		•				
Strum Along Songs	DJ Software	187					•						
Trumpet Master	MasterSoft	187		•			•						
Underware Colorpak	Diversions	204		•			•		•				
Video Billboard	Dynacomp	207			•								
Video Title Editor	Videoware	206		•	•		•	•	•				
Video Titler	Dynacomp	207			•								
Videoworks	Hayden Software	193								•			
Voice Master	Covox	184		•	•		•		•				MSX
Walt Disney Comic Strip Maker	Bantam Electronic Publishing	194		•			•						
Z-Glove	Sharedate	185		•			•	•					

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Bible Baseball	Davka	219		•	•								
Bible Mates	Smoky Mountain Software	217					•						
Biblesoft	Hi-Tech Ministries	218		•	•		•	•	•	•			

CHAPTER 12: Up in the Sky

Name of Program	Company	Page	Amiga	Apple II	Atari 8 bit	Atari ST	Commodore 64/128	Commodore VIC-20	IBM PC/PCjr	Macintosh	TI-99/4A	TRS	Other
Astrosell	Zephyr Services	229		•					•				
Cometwatch	Zephyr Services	228		•			•		•				
Eclipse Map	Charles Kluepfel	229		•			•						
The Great International Paper Airplane Construction Set	Simon & Schuster	230		•			•		•	•			
Halley	StarSoft	228							•				
Halley Patrol	Urania Systems	228			•								
The Halley Project	Mindscape	228		•	•				•				
Halley's Comet on Your Home Computer	S & T Software	227		•	•		•				•		
Learn About the Solar System and Halley's Comet	Millet Software	228								•			
MacStronomy	Alphabyte Software	229								•			
Orbiter	Spectrum Holobyte	233							•	•			
Project: Space Station	HesWare	232		•			•						
Shuttle Designer	Simpletec	233					•						
Sky Lab	MECC	229		•									
Sky Travel	Commodore	229					•						
Space Shuttle: A Journey into Space	Activision	233		•	•		•						
StarChart	Visionary Software	229		•					•				
TellStar II	Spectrum Holobyte	225		•					•	•			
The Toy Shop	Broderbund	231		•			•		•	•			

CHAPTER 13: Gambling Programs

[illegible]

CHAPTER 14: Miscellaneous

The Administrators	MECC	257								Inquire
The Apparel Manager	Retail Solutions	255								
Archive	DHC Educational Software	256								

Name of Program	Company	Page	Amiga	Apple II	Atari 8 bit	Atari ST	Commodore 64/128	Commodore VIC-20	IBM PC/PCjr	Macintosh	TI-99/4A	TRS	Other
Auto Body Computer	Automotive Computer Group	255							•				
Babble 1-2-3	Antic Software	261		•		•							
Concepts Computerized Atlas	Software Concepts	252		•					•	•			
Dining in Manhattan	Concept Development Associates	259		•									
Eat N.Y.	K.I.N.	258							•	•			
Exams	Microsoft Software Services	257										•	
Exams II	Shenadoah Software	257										•	
Exam Writer	Orange Microwave	257							•				CP/M
Funeral Director's Management System	Davidson Software Systems	254											Inquire
George Plimpton's Great Speaker's File of Stories, Jokes, & Anecdotes	Bureau of Business Practice	261							•				
Grade Manager	Smoky Mountain Software	257											
H.E.L.P.	CMA Micro Computer	255		•			•						
Hippo Computer Almanac	Hippopotamus Software	252				•				•			
Hollander Computer System	Hollander Publishing	255							•				
Math Assistant	Scholastic Software	257		•									
Micro Travel Companion	Concept Development Associates	251		•					•				
The Millennium Electronic Almanac	Avant-Garde	253		•					•				
Mom and Me	Antic Software	261		•		•							
OR-D Medical/Dental Management System	OR-D Systems	255		•					•	•			AT&T

About the Author

Dan Gutman is the author of "Computers & Technology," a twice-weekly newspaper column distributed by the McNaught Syndicate (if it's not in your local paper, *demand* it!). He has also written about technology for *USA Today*, *Science Digest*, *Psychology Today*, *Esquire*, and many other publications. He was the founder and editor-in-chief of *Computer Games* magazine, may it rest in peace. His last book, *The Greatest Games*, was written with Shay Addams and also published by COMPUTE! Books. Dan and his wife, Nina, live in New York City.

Note to readers: Have we left anything out? If you have created or heard of some interesting, unusual, or wonderful software, please tell us about it. Write to Dan Gutman, P.O. Box 1882, Madison Square Station, New York, NY 10159.

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- Improve your memory
- Stop smoking
- Design your own car
- Figure out how long you'll live
- Create your own cartoons
- Beat the odds at blackjack
- Enter new worlds with electronic simulations
- And much more

You'll find ordering information for each of the programs in the appendix. The programs described are ready to run straight from the box; you don't need to know anything about computers or programming to use any of them.

Like all COMPUTE! books, *I Didn't Know You Could Do That with a Computer!* is packed with solid information that puts the *fun* back into your computer. Author Dan Gutman knows how to have fun with a computer and how to get the most out of it. His clear, lively writing entertains as his research educates. Nobody will ever again ask, "But what can I do with a computer?"